

Chapter 4: Affected Environment, Environmental Consequences and Mitigation

CHAPTER 4

AFFECTED ENVIRONMENT, ENVIRONMENTAL CONSEQUENCES AND MITIGATION

4.0 INTRODUCTION

Summary of Affected Environments

Four different alternatives for the development and improvement of the Ravalli County Airport have been proposed. The four alternatives include: 1) No Action; 2) relocate the runway centerline 80 feet east; 3) relocate the runway centerline 240 feet east; and 4) relocate the runway centerline 400 feet east. The following is a summary of the analysis completed for each affected environment topic for each development alternative. Refer to the following table (Table 4-1) for a summary of the affected environment topics by proposed development alternative.

TABLE 4-1: Matrix Summary of Affected Environment Topics by Proposed Alternatives

	Affected Environment	Alternative 1	Alternative 2	Alternative 3	Alternative 4
4.1	Air Quality	Insignificant	Insignificant	Insignificant	Insignificant
4.2	Biotic Resources	Insignificant	Moderate	Moderate	Moderate
4.3	Coastal Resources	NA	NA	NA	NA
4.4	Coastal Zone Management	NA	NA	NA	NA
4.5	Compatible Land Use	Insignificant	Insignificant	Insignificant	Insignificant
4.6	Construction Impacts	NA	Insignificant	Insignificant	Insignificant
4.7	Section 4F Land	NA	NA	NA	NA
4.8	Federal-listed Endangered and Threatened Species	Insignificant	Insignificant	Insignificant	Insignificant
4.9	Energy Supplies, Natural Resources, and Sustainable Design	Insignificant	Insignificant	Insignificant	Insignificant
4.10	Environmental Justice	Insignificant	Insignificant	Insignificant	Insignificant

4.11	Farmlands	Insignificant	Insignificant	Insignificant	Insignificant
4.12	Floodplain	Insignificant	Insignificant	Insignificant	Insignificant
4.13	Hazardous Materials	Insignificant	Insignificant	Insignificant	Insignificant
4.14	Historic and Archeological	Insignificant	Moderate	Moderate	Moderate
4.15	Induced Socioeconomic	Insignificant	Insignificant	Insignificant	Insignificant
4.16	Light Emissions and Visual Effects	Insignificant	Insignificant	Insignificant	Insignificant
4.17	Noise	Moderate	Moderate	Moderate	Moderate
4.18	Social Impacts	Insignificant	Insignificant	Insignificant	Insignificant
4.19	Solid Waste	Insignificant	Insignificant	Insignificant	Insignificant
4.20	Water Quality	Insignificant	Insignificant	Insignificant	Insignificant
4.21	Wetlands	Insignificant	Insignificant	Moderate	Moderate
4.22	Wild and Scenic Rivers	NA	NA	NA	NA
4.23	Cumulative Impacts	Insignificant	Insignificant	Insignificant	Insignificant

Ratings = insignificant, moderate, significant, not applicable (NA).

Insignificant = not measurable

Moderate = measureable, but can be mitigated

Significant = measureable, but cannot be mitigated

4.1 AIR QUALITY

The U.S. Environmental Protection Agency (EPA) has established national Ambient Air Quality Standards (NAAQS) for six criteria air pollutants: carbon monoxide (CO), ozone (O₃), particulate matter (PM₁₀), sulfur dioxide (SO₂), oxides of nitrogen (NO_x), and lead (Pb).

FAA Order 1050.1E states, "The General Conformity Rule only applies in areas that EPA has designated non-attainment or maintenance." Ravalli County does not contain EPA-regulated non-attainment areas or a maintenance plan for criteria air pollutants.

Therefore, an air quality General Conformity analysis is not required as a part of this Environmental Assessment.

4.1.1 IMPACTS

It is anticipated that development will not result in significantly increased use of the airport facility that would not otherwise occur as a result of the airport's current rate of growth in the absence of airport improvements. However, potential increases to landside and airside capacity could occur coincident to implementation of all identified project alternatives. There are no identified "hot spots" (areas where NAAQS might be exceeded as a result of implementation of identified project alternatives). Lack of non-attainment areas and maintenance plans within Ravalli County and lack of identified air quality "hot spots" indicates that project development for all alternatives will not require further air quality analysis and will not result in violations of NAAQS or the State Implementation Plan.

4.1.2 MITIGATION

The project specifications will include temporary control measures to minimize the effects to air quality by the project during construction activities. Project construction activities will have similar effects to air quality as agricultural activities that occur on adjoining properties. Temporary control measures will include implementation of Best Management Practices (BMPs) to minimize airborne dust resulting from ground-disturbing activities. Project specifications will also include requirements to meet permitting requirements for asphalt plant and crushing operations, as well as State and Federal air quality requirements.

4.1.3 CONCLUSION

The Ravalli County Airport is not located within a non-attainment area for air pollutant constituents. Development Alternative 1 is not anticipated to result in impacts to air quality as it is a 'no action' alternative. Development at the airport to meet project facility requirements (Alternatives 2-4) is not expected to substantially affect air pollutant levels.

4.2 BIOTIC RESOURCES

Morrison-Maierle, Inc., Environmental Services Group completed an on-site investigation of the Ravalli County Airport property on September 29 and 30, 2004, to inventory and assess the biological components associated with the project area. Additional information was obtained to support the on-site investigation findings through a literature search relevant to the subject property from the Montana Natural Heritage Program (MNHP) and agencies such as the U.S. Fish and Wildlife Service (USFWS) and Montana Department of Fish, Wildlife, and Parks (MFWP). More specifically, the reconnaissance-level pedestrian survey of the project area was performed to collect data for vegetation, terrestrial, and aquatic species, including federally listed threatened and endangered (T&E) species (discussed in the Threatened and Endangered Species

Analysis section of this Environmental Assessment), candidate species, species of concern, and state- and county-declared noxious weeds.

Potential affected environments in the biotic communities impact analysis include: general vegetation, rare and sensitive plant species, noxious weeds, general wildlife, rare and sensitive wildlife species, general fisheries, and rare and sensitive fish species. Impacts to the above listed biotic communities are expected to be insignificant for development Alternatives 1-4 with the exception of possible impacts to general wildlife corresponding to Alternatives 2, 3 and 4. General wildlife species (i.e. deer, ground-nesting mammals, and birds) may be displaced with the implementation of Alternatives 2, 3 and 4. Therefore, impacts resulting from these alternatives were determined to be moderate for general wildlife.

4.2.1 GENERAL VEGETATION

The project area occurs in the Intermountain Valley Grassland and Meadow vegetative type, according to the vegetation classification system developed by Payne (1973). This vegetative type is characterized by topography of valleys, low hills, and flats. Species that distinguish this vegetative type include meadow grasses (*Deschampsia* spp., *Melica* spp., and *Agrostis* spp.), needlegrasses (*Stipa* spp.), sedges (*Carex* spp.), and willow shrubs (*Salix* spp.). Other common species expected to occur within this type are Sandberg bluegrass (*Poa secunda*), Canada bluegrass (*Poa compressa*), prairie junegrass (*Koeleria cristata*), and rough fescue (*Festuca scabrella*).

The field survey at the project site revealed the presence of three general vegetative categories: agriculture, upland, and wetland. Areas that had previously been converted to agricultural production, specifically alfalfa (*Medicago sativa*), include the area south of the existing runway and Tammany Lane, and the area north of the runway and Gird Creek, which is situated on top of a topographic bench and is bisected by Stock Farm Road. The interiors of these alfalfa fields contain scattered occurrences of non-native, weedy species, while upland vegetation and higher densities of weedy species characterize the perimeters.

Grassland and meadow vegetation types dominate the majority of the area within the project boundaries. The species observed that represent typical upland vegetation on the project site include: timothy grass (*Phleum pratense*), bluegrass species (*Poa* spp.), brome species (*Bromus* spp.), rough bentgrass (*Agrostis scabra*), needlegrasses, slender wheatgrass (*Agropyron trachycaulus*), orchard grass (*Dactylis glomerata*), prickly lettuce (*Lactuca serriola*), campion species (*Silene* spp.), dandelion (*Taraxacum officinale*), clover species (*Trifolium* spp.), mustard species (*Sisymbrium* spp.), western wheatgrass (*Agropyron smithii*), kochia (*Kochia scoparia*), quackgrass (*Agropyron repens*), Wood's rose (*Rosa woodsii*), and common snowberry (*Symphoricarpos albus*).

Several wetland areas were identified during the field investigation, and are located throughout the subject property. Significant wetland acreage was found to the east of the existing runway and in the area north of the runway associated with Gird Creek. Dominant wetland vegetation that was observed during the field investigation includes:

dagger-leaf rush (*Juncus ensifolius*), slender rush (*Juncus tenuis*), baltic rush (*Juncus balticus*), Nebraska sedge (*Carex nebrascensis*), beaked sedge (*Carex rostrata*), reed canarygrass (*Phalaris arundinacea*), American speedwell (*Veronica Americana*), American mannagrass (*Glyceria grandis*), tufted hairgrass (*Deschampsia cespitosa*), prickly currant (*Ribes lacustris*), black cottonwood (*Populus balsamifera*), willow species, smooth scouring rush (*Equisetum laevigatum*), broad-leaved cattail (*Typha latifolia*), and fowl bluegrass (*Poa palustris*).

4.2.1.1 Impacts

Alternative 1: No impacts to general vegetation will occur with this no action alternative. Therefore, there are no mitigation measures required for this alternative.

Alternative 2: Permanent loss of vegetation will occur in the area where this new runway and parallel taxiway will be constructed. However, the amount of vegetation lost will be minimal and project activities are expected to have no adverse effects to general vegetation populations in the area.

Alternative 3: Permanent loss of vegetation will occur in the area where this new runway and parallel taxiway will be constructed. However, the amount of vegetation lost will be minimal and project activities are expected to have no adverse effects to general vegetation populations in the area.

Alternative 4: Permanent loss of vegetation will occur in the area where this new runway and parallel taxiway will be constructed. However, the amount of vegetation lost will be minimal and project activities are expected to have no adverse effects to general vegetation populations in the area.

4.2.1.2. Mitigation Measures

Alternatives 2, 3, and 4: Revegetate bare ground that is created from construction activities with a desirable seed mix that is appropriate for the area and that will provide competition against invasive species' establishment and spread.

4.2.2 RARE AND SENSITIVE PLANT SPECIES

Rare and sensitive plant species are designated as such by the U.S. Forest Service (USFS), Bureau of Land Management (BLM), and MNHP. MNHP is responsible for documenting and updating the current status of each designated species. A search of the MNHP database revealed three plant species of concern within a 4-mile radius of the project site, including box elder (*Acer negundo*), sandweed (*Athysanus pusillus*), and palish sedge (*Carex pallescens*).

Based on the results from the MNHP database search, there is a box elder tree within 4 miles of the project area that is the largest reported box elder in the state of Montana. The global rank (range-wide) is Z (ranking not applicable) and the state rank is SNR (no rank). Although this tree is located in the general vicinity of the subject property, it is not

present within or immediately adjacent to the project area. An observation of sandweed was reported in 1974, within about 3 miles of the project site. This species of concern has a global rank of G4 ("uncommon but not rare") and the state rank is S1 ("extremely limited and/or rapidly declining numbers"). Sandweed has "sensitive" status with both the USFS and the BLM. Sandweed occurs on shallow soil of steep slopes and cliffs in the lower montane zone. No sandweed was observed during the field investigation of the site and habitat specifications for this species do not exist on-site. A specimen of palish sedge was collected in 1986, within approximately 3 miles of the project site. The global rank for this species of concern is a G5 ("common, widespread, and abundant") and the state rank is S1. Palish sedge habitat is identified as moist woodland margins (MNHP 2006). These habitat specifications do not exist on-site and occurrences of this species are unlikely. No palish sedge was observed during the field investigation of the site.

4.2.2.1 *Impacts*

Alternative 1: No impacts to rare and sensitive plant species will occur with this "No Action" alternative. Therefore, there are no mitigation measures required for this alternative.

Alternatives 2, 3, and 4: Based on the information obtained from MNHP, the results of the field investigation, and the absence of individuals and on-site habitat specifications, no adverse impacts to rare and sensitive plant species are anticipated from construction activities associated with Alternatives 2, 3, and 4. Therefore, there are no mitigation measures required for Alternatives 2, 3, and 4.

4.2.3 NOXIOUS WEEDS

Pursuant to the Montana County Noxious Weed Control Law (MCA 7-2101 through 2153), noxious weeds are defined as being any exotic plant species that may render land unfit for agriculture, forestry, livestock, wildlife, or other beneficial uses, or that may harm native plant communities. Noxious weeds are classified into four categories that identify frequency of occurrence, rate of spread, and subsequent levels of concern. Category I noxious weeds are those species that are currently established and generally widespread in many counties of the state. Category II weeds have recently been introduced into the state or are rapidly spreading from their current infestation sites. Category III weeds have not been detected in the state or may be found only in small, scattered, or localized infestations. Category IV weeds are specific to each county in the state and are those species that have become a problem or have the potential to impact the environment or economy of that county.

According to the Ravalli County Weed District, there are no Category IV noxious weeds in Ravalli County. The following noxious weeds were observed in the project area: Canada thistle (*Cirsium arvense*), spotted knapweed (*Centaurea maculosa*), houndstongue (*Cynoglossum officinale*), common tansy (*Tanacetum vulgare*), and yellow toadflax (*Linaria vulgaris*). All five of these invasive species are classified as Category I noxious weeds in Montana.

4.2.3.1 Impacts

Alternative 1: This “No Action” alternative will not promote the spread of noxious weeds and invasive species as no construction activities will take place. Therefore, there are no mitigation measures required for this alternative.

Alternative 2: In areas where the ground is disturbed as a result of construction activities, the spread of noxious weeds and invasive species is possible.

Alternative 3: In areas where the ground is disturbed as a result of construction activities, the spread of noxious weeds and invasive species is possible.

Alternative 4: In areas where the ground is disturbed as a result of construction activities, the spread of noxious weeds and invasive species is possible.

4.2.3.2 Mitigation Measures

Alternatives 2, 3, and 4: Before implementation of proposed project construction, develop a weed management plan in coordination with the Ravalli County Weed District agent, to identify weed control strategies within the proposed project areas. If chemical weed control is necessary, select herbicides that are appropriate for use in riparian areas and around wildlife. Implementation of this mitigation measure shall prevent adverse effects from noxious weeds.

4.2.4 GENERAL WILDLIFE

Habitat conditions for wildlife species appear to be of average quality on the airport property. Adequate forage, shelter, and movement corridors exist within the project area. However, due to the concentration of human, aircraft, and vehicle activity associated with the airport, significant displacement of wildlife species to adjacent properties has likely occurred.

A review of Foresman's *The Wild Mammals of Montana* (2001) indicated that there have been 67 species of mammals in Ravalli County for which specimens have been collected or recorded. Wildlife species common to the project area include: mountain cottontail (*Sylvagus nuttallii*), raccoon (*Procyon lotor*), porcupine (*Erethizon dorsatum*), striped skunk (*Mephitis mephitis*), and white-tailed deer (*Odocoileus virginianus*). Three species of mammals were observed in the project area during the field investigation: white-tailed deer, red fox (*Vulpes vulpes*), and striped skunk. White-tailed deer were observed at various locations on the site, and several deer were noted in the wetland area near Gird Creek, north of the existing runway. The red fox was observed in the wetland area just north of Tammany Lane, due south of the existing hangar locations. The striped skunk was observed in the alfalfa field that is situated on top of the topographic bench located north of the existing runway and Gird Creek. Numerous rodent mounds and burrows were also observed throughout the wetland and upland areas within the property boundaries. Scat and tracks from deer and rodents were observed at various locations within the project area, including the alfalfa fields, upland,

and wetland areas. Two observations of coyote (or possibly fox) scat were noted on the project area, and one was located southwest of the hangar locations and the other was found east of the existing runway.

According to the distribution maps presented in *Herpetology in Montana* (Maxell et al. 2003), there are eight amphibian and nine reptile species that may inhabit the area and were previously observed or collected as specimens in Ravalli County. However, the spotted frog (*Rana pretiosa*) was the only amphibian observed on the project area and no reptiles were observed. Along the portion of Gird Creek that is located within the project area, more than 50 spotted frog individuals were observed in and adjacent to the stream channel.

The Montana Bird Distribution Database was originally created in 1991 and contains information on each bird species found in Montana, including wintering, breeding, migration, and other basic information on each bird record submitted. The Montana Bird Distribution Committee has compiled observations of 148 different bird species from 1998 to 2003 within the quarter latilong (25D) containing the project site. Various songbirds, waterfowl, and raptors may utilize habitat within and adjacent to the project site. Species that were observed (O) or heard (H) during the field investigation include the black-capped chickadee (*Poecile atricapillus*, H), ring-necked pheasant (*Phasianus colchicus*, O), red-winged blackbird (*Agelaius phoeniceus*, O), yellow warbler (*Dendroica petechia*, O), northern flicker (*Colaptes auratus*, O), field sparrow (*Spizella pusilla*, O), brown-headed cowbird (*Molothrus ater*, O), red-tailed hawk (*Buteo jamaicensis*, O), Wilson's snipe (*Gallinago delicata*, O), gray catbird (*Dumetella carolinensis*, O, H), western meadowlark (*Sturnella magna*, O, H), and the Canada goose (*Branta canadensis*, O). No nests or nest cavities were noted in live trees or dead snags within the project area during the field investigation.

4.2.4.1 Impacts

Alternative 1: No impacts to general wildlife will occur with this "No Action" alternative. Therefore, there are no mitigation measures required for this alternative.

Alternative 2: Permanent loss of upland vegetation, wetland area (total potential impact of 0.60 acres), riparian vegetation associated with Gird Creek, and possibly perching and nesting habitat for avian species (several large decadent cottonwood trees located on the topographic bench north of the existing runway) would occur in the area where this new runway and parallel taxiway will be constructed (80 feet east of the existing runway). A portion of Gird Creek may also be culverted for the newly constructed runway. The implementation of this alternative may result in displacement (through loss of habitat, increased noise, and increased activity) of species (white-tailed deer, spotted frogs, waterfowl, songbirds, and small mammals) that utilize the Gird Creek riparian area and the upland areas adjacent to the existing airport development area as cover, forage, breeding, and movement habitat. However, large quantities of adjacent suitable habitat exists that can support species that are displaced by construction activities and the resulting modification of the project area.

The proposed installation of wildlife/animal control fencing around the perimeter of the airport property will result in the loss of habitat for large mammal species such as deer and coyote. Small mammal species such as skunk and raccoon are not anticipated to be impeded by the perimeter fencing; however, activity from airport operations could result in this area becoming less desirable for their use. Although large mammal species will be prevented from accessing the airport site and disturbance may limit use by small mammals, suitable habitat of an adequate quantity and quality adjacent to the property is available for displaced individuals. Therefore, with the implementation of Alternative 2, no adverse effects to general wildlife species are anticipated.

Alternative 3: Permanent loss of upland vegetation, wetland area (total potential impact of 1.48 acres), riparian vegetation associated with Gird Creek, and possibly perching and nesting habitat for avian species (several large decadent cottonwood trees located on the topographic bench north of the existing runway) would occur in the area where this new runway and parallel taxiway will be constructed (approximately 240 feet east of the existing runway). A portion of Gird Creek may also be culverted for the newly constructed runway. The implementation of this alternative may result in displacement (through loss of habitat, increased noise, and increased activity) of species (white-tailed deer, spotted frogs, waterfowl, songbirds, and small mammals) that utilize the Gird Creek riparian area and the upland areas adjacent to the existing airport development area as cover, forage, breeding, and movement habitat. However, large quantities of adjacent suitable habitat exists that can support species that are displaced by construction activities and the resulting modification of the project area.

The proposed installation of wildlife/animal control fencing around the perimeter of the airport property will result in the loss of habitat for large mammal species such as deer and coyote. Small mammal species such as skunk and raccoon are not anticipated to be impeded by the perimeter fencing; however, activity from airport operations could result in this area becoming less desirable for their use. Although large mammal species will be prevented from accessing the airport site and disturbance may limit use by small mammals, suitable habitat of an adequate quantity and quality adjacent to the property is available for displaced individuals. Therefore, with the implementation of Alternative 3, no adverse effects to general wildlife species are anticipated.

Alternative 4: Permanent loss of upland vegetation, wetland area (total potential impact of 1.96 acres), riparian vegetation associated with Gird Creek, and possibly perching and nesting habitat for avian species (several large, decadent cottonwood trees located on the topographic bench north of the existing runway) would occur in the area where this new runway and parallel taxiway will be constructed (approximately 400 feet east of the existing runway). A portion of Gird Creek may also be culverted for the newly constructed runway. The implementation of this alternative may result in displacement (through loss of habitat, increased noise, and increased activity) of species (white-tailed deer, spotted frog, waterfowl, songbirds, and small mammals) that utilize the Gird Creek riparian area and upland areas adjacent to the existing airport development area as cover, forage, and movement habitat. However, large quantities of adjacent suitable habitat exists that can support any species displaced by construction activities and the resulting modification of the project area.

The proposed installation of wildlife/animal control fencing around the perimeter of the airport property will result in the loss of habitat for large mammal species such as deer and coyote. Small mammal species such as skunk and raccoon are not anticipated to be impeded by the perimeter fencing. However, activity from airport operations could result in this area becoming less desirable for their use. Although large mammal species will be prevented from accessing the airport site and disturbance may limit use by small mammals, suitable habitat of an adequate quantity and quality adjacent to the property is available for displaced individuals. Therefore, with the implementation of Alternative 4, no adverse effects to general wildlife species are anticipated.

4.2.4.2 *Mitigation Measures*

Alternatives 2, 3 and 4: To the extent possible, minimize impacts to Gird Creek and its associated fringe wetland, the upland areas adjacent to the existing airport development, and where practicable, avoid and minimize damage to and the removal of existing trees within and adjacent to the proposed project areas to maintain adequate desirable habitat for wildlife.

Wildlife/animal control fencing will be installed around the perimeter of the airport in order to discourage (i.e., prevent access) to larger mammal species such as deer, coyote, and domesticated dogs from entering and traversing the airport property. This perimeter fencing will also help to regulate access to the airport property by unauthorized vehicles and persons.

4.2.5 RARE AND SENSITIVE WILDLIFE SPECIES

A search of the MNHP database indicated that there are no rare or sensitive wildlife species within the project area. Federally listed Threatened and Endangered (T&E) and candidate species are addressed in the Threatened and Endangered Species Analysis section of this document.

4.2.5.1 *Impacts*

Alternative 1: No impacts to rare and sensitive wildlife species will occur with this "No Action" alternative. Therefore, there are no mitigation measures required for this alternative.

Alternatives 2, 3, and 4: Based on the information obtained from MNHP and the results of the field investigation, rare and sensitive wildlife species and suitable species habitat is not present within the project area for Alternatives 2, 3, and 4. No adverse impacts to rare and sensitive wildlife species are anticipated from construction associated with Alternatives 2, 3, and 4 described in this Environmental Assessment, therefore, there are no mitigation measures required for Alternatives 2, 3, and 4.

4.2.6 GENERAL FISHERIES

No fisheries information exists for the irrigation ditches located on the southern-most end of the airport property, nor for the unnamed creek that runs along the western

boundary of the property. Salmonid populations are not likely to reside in these ditches due to the fluctuation in flow from irrigation practices. In-stream fisheries habitat in these ditches is insignificant due to the ephemeral nature of the creeks not being able to support salmonids. No fish species were observed in any irrigation ditches located within the project boundaries.

According to MFWP, the portion of Gird Creek that occurs within the vicinity of the project area supports a salmonid fishery. At a location approximately 1.5 miles upstream of the airport, information indicating the presence of brook trout (*Salvelinus fontinalis*) and a small number of westslope cutthroat trout (*Oncorhynchus clarki lewisi*) was collected on an unspecified previous date by MFWP. At a location downstream of the airport on the Teller Wildlife Refuge, MFWP has previously collected data indicating the presence of rainbow (*Oncorhynchus mykiss*), brown (*Salmo trutta*), and brook trout. However, none of these fish species were observed during the field investigation in the portion of Gird Creek that is located within the project area. In March of 2005, MFWP surveyed two reaches of Gird Creek associated with the airport property and did not locate any salmonids during their investigation.

A search of the Montana Fisheries Information Database indicated that Gird Creek has a common occurrence of brook trout between river miles 0.0 and 9.1, and a rare occurrence of bull trout and westslope cutthroat trout between river miles 7.2 and 13.8. This information is based on survey results, but the specific survey information is not available. The project area is located at approximately stream mile 3.3. Additional information was provided by Chris Clancy, MFWP's Bitterroot fisheries biologist, concerning fisheries survey information on Gird Creek. Mr. Clancy indicated that the distribution of fish species in Gird Creek is typical of streams in the area, with the lower reaches supporting a variety of fish similar to the Bitterroot River, such as rainbow trout, brown trout, and brook trout, and the upper reaches supporting westslope cutthroat and bull trout. On March 10, 2005, Chris Clancy completed electrofishing surveys of two 300-foot reaches of Gird Creek within the airport property. Mr. Clancy did not prepare or provide a detailed written report of the electrofishing results, but documented that two longnose suckers (*Catostomus catostomus*) were the only fish identified within the reaches. Mr. Clancy also stated that the MFWP fisheries information for Gird Creek near the Teller Wildlife Refuge is not actually the historic Gird Creek channel, but may receive surface water from Gird Creek.

Gird Creek extends through the airport property east to west/northwest approximately 200 feet north of the existing runway along a topographic bench. Within the property boundaries of the project, the general habitat conditions of Gird Creek include approximately 80 percent overhead cover provided by dense vegetation, including: reed canarygrass (*Phalaris arundinacea*), American speedwell (*Veronica americana*), broad-leaved cattail (*Typha latifolia*), American mannagrass (*Glyceria grandis*), and bittersweet nightshade (*Solanum dulcamara*). In-stream cover is provided by mosses and other submerged vegetation. The average width of the stream is approximately 5 feet and the average depth is approximately 18 inches. The bottom substrate consists predominantly of fine silty substrate (approximately 90 percent) with 5 percent gravels and 5 percent cobbles. In-stream habitat was predominantly homogeneous with runs

dominating (95 percent), and a few pools existing on meander bends where down-cutting has occurred. The bank was predominantly stable and vegetated except in a few areas that had trampled banks, due to cattle grazing in the area.

The reach of Gird Creek located within the project area would most likely support brook trout and other non-salmonid species (such as longnose suckers). However, bull trout and cutthroat trout are not likely to be residents in the project area. Expected impacts to general fish species are described in the following section. Cutthroat trout are typically found in streams with in-stream habitat consisting of riffle/pool complexes, gravel/cobble substrate, and cold temperatures. Westslope cutthroat trout are addressed in detail in the following section titled *Rare and Sensitive Aquatic Species*. Bull trout are typically found in reaches with gravel substrate, cold temperatures, and low gradients. Bull trout are addressed in detail in the Threatened and Endangered Species Analysis portion of this document.

4.2.6.1 Impacts

Alternative 1: No impacts to general fisheries will occur with this no action alternative. Therefore, there are no mitigation measures required for this alternative.

Alternative 2 and 3: Based on the information obtained from MFWP, and the results of the field investigation, it is concluded that the reaches of Gird Creek associated with the subject property do not currently support populations of salmonid fish species and do support low densities of longnose sucker. Incidental occurrences of salmonids may occur in Gird Creek within the reaches associated with the airport property and these reaches may be utilized as a migratory corridor. However, brook trout are the only salmonid species that may possibly inhabit these reaches as brook trout are more tolerant of degraded stream conditions (silty substrate, elevated water temperatures, and minimal instream habitat) than westslope cutthroat trout and bull trout. This alternative may result in culverting a portion of Gird Creek. This action will result in the loss of instream habitat for general fish species. An artificial ditch that maintains perennial surface water may also be impacted from construction activities associated with this alternative. However, fish are not known to occur in this ditch. Given the possible occurrence of salmonids utilizing Gird Creek as a migratory corridor, potential moderate impacts to general fisheries are expected with the implementation of this alternative.

Alternative 4: Based on the information obtained from MFWP, and the results of the field investigation, it is concluded that the reaches of Gird Creek associated with the subject property do not likely support populations of salmonid fish species and do support low densities of longnose sucker. Incidental occurrences of salmonids may occur in Gird Creek within the reaches associated with the airport property and these reaches may be utilized as a migratory corridor. However, brook trout are the only salmonid species that may possibly inhabit these reaches as brook trout are more tolerant of degraded stream conditions (silty substrate, elevated water temperatures, and minimal instream habitat) than westslope cutthroat and bull trout. This alternative may result in culverting a portion of Gird Creek. This action will result in the loss of

instream habitat for general fish species. Two artificial ditches that maintain perennial surface water may also be impacted from construction activities associated with this alternative. However, fish are not known to occur in these ditches. Given the possible occurrence of salmonids utilizing Gird Creek as a migratory corridor, potential moderate impacts to general fisheries are expected with the implementation of this alternative.

4.2.6.2 *Mitigation Measures*

Alternatives 2, 3 and 4: Complete instream construction work within the shortest amount of time feasible and avoid the wetted channel wherever practicable.

If necessary, install temporary flow/velocity dissipaters immediately upstream of the proposed construction area to reduce anticipated levels of sedimentation and turbidity during construction. Obtain the necessary permits associated with the installation of temporary instream flow/velocity dissipaters.

Obtain the necessary permits for construction activities affecting known waters of the U.S. Regulatory requirements will likely include an SPA 124 permit (administered by MFWP), a Clean Water Act Section 404 Nationwide Permit (administered by USACE), and a 318 Authorization for short-term turbidity exemption (administered by DEQ).

Store excavated substrate from the stream outside of the wetted channel in a manner that will prevent increased sedimentation to the drainages during construction activities.

Mitigation may include the restoration of the natural channel, pattern, dimension, and profile of Gird Creek in reaches within the airport property that have been historically straightened or simplified. To offset proposed impacts to the riparian area, improve/create a commensurate riparian acreage within the airport property to provide improved fisheries habitat.

Where practicable, avoid or minimize disturbance to riparian vegetation. Re-vegetate all disturbed areas with desirable species and implement bank stabilization measures for disturbed channel banks. Re-vegetation strategies should be monitored and maintained until species have become well established.

Implement Best Management Practices (BMP) (such as silt fences, coffer dams, or hay bale dikes) to control erosion, sedimentation, and turbidity resulting from proposed construction activities.

Fish passage structures will be installed utilizing bankfull width plus 10 percent to provide for flow complexity within each structure. Also use natural stream channel techniques where necessary to maintain the same stream gradient as the existing conditions, as suggested by Chris Clancy, State fisheries biologist.

Ensure that all waste fuels, lubricating fluids, and other chemicals are disposed of properly. Construction equipment should be inspected daily during operation to ensure hydraulic, fuel, and lubrication systems are in good condition and free of leaks to

prevent these materials from entering the stream. Vehicle servicing, refueling, fuel storage areas, construction equipment staging, and materials storage areas should be sited a minimum of 15 meters (50 feet) from the Ordinary High Water Mark (OHW). All fluids and materials should be properly stored in containers to prevent unnecessary spills from entering the stream.

4.2.7 RARE AND SENSITIVE FISH SPECIES

According to the database search by MNHP, two species of fish that occur in Gird Creek are classified as species of concern, the westslope cutthroat trout and the bull trout. A detailed discussion on potential impacts to bull trout is provided in the Threatened and Endangered Species section. The westslope cutthroat trout maintains a global rank of G4T3 [uncommon but not rare, infraspecific taxa (subspecies or varieties) potentially at risk], state rank of S2 (at risk), and sensitive status with the BLM and U.S. Forest Service. According to the MNHP species information site, westslope cutthroat trout are found in the Clark Fork watershed, the Kootenai watershed, and the headwaters of the Missouri and Saskatchewan Rivers. Westslope cutthroat spawn in the spring and require gravel substrate in riffles and pool crests. Spawning and rearing streams tend to be cold and nutrient poor. Westslope cutthroat are regarded as sensitive to fine sediment, and although studies have documented negative survival as fine sediments increase, it is difficult to predict their response to fine sediment in the wild. No rare or sensitive fish, or species of concern were observed in any of the ditches/creeks/waterways within the project area during the field investigation. However, a survey of Gird Creek on July 24, 1978, revealed the presence of westslope cutthroat trout at river mile 5.4, which is approximately 2.1 miles upstream of the project site; another survey on October 27, 1993, found westslope cutthroat trout to be located at river mile 4.8, approximately 1.5 miles upstream of the airport property. Westslope cutthroat trout have also been located during stream surveys, performed by MFWP, upstream of the project area (approximately 10 miles) at river miles 13.4 and 13.5.

4.2.7.1 *Impacts*

Alternative 1: No impacts to westslope cutthroat trout will occur with this “No Action” alternative. Therefore, there are no mitigation measures required for this alternative.

Alternatives 2, 3 and 4: Based on the information obtained from MNHP, MFWP, and the results of the field investigation, no adverse impacts to westslope cutthroat trout or any other rare and sensitive fish species are anticipated from construction activities associated with Alternatives 3 and 4. A portion of Gird Creek may be culverted and in-stream habitat altered in this area. However, habitat specifications for westslope cutthroat trout do not exist within the reaches of Gird Creek potentially affected by project activities. An incidental occurrence of this species may occur in the general area. However, preferred habitat is not present and a recent survey of Gird Creek did not indicate the presence of westslope cutthroat trout in the reaches associated with the project. Therefore, it is concluded that project activities will have no adverse effects to westslope cutthroat trout, and mitigation measures for any incidental occurrence of this species are described in the previous section *General Fisheries*. Bull trout are

addressed in detail in the Threatened and Endangered Species Analysis Biological Assessment section of this document.

4.3 COASTAL BARRIERS

The “No Action”, proposed action, and reasonable alternatives would not affect coastal barriers due that the Airport is not located near a coastal barrier.

4.4 COASTAL ZONE MANAGEMENT

The “No Action”, proposed action, and reasonable alternatives would not affect coastal barriers due that the Airport is not located near a coastal area.

4.5 COMPATIBLE LAND USE

“All persons are born free and have certain inalienable rights. They include the right to a clean and healthful environment and the rights of pursuing life’s basic necessities, enjoying and defending their lives and liberties, acquiring, possessing and protecting property, and seeking their safety, health and happiness in all lawful ways. In enjoying these rights, all persons recognize corresponding responsibilities.”

Article II, Section 3, Montana Constitution.

“The state and each person shall maintain and improve a clean and healthful environment in Montana for present and future generations.”

Article IX, Section 1, Montana Constitution.

These statements serve as the primary foundation for the Ravalli County Growth Policy and for the County’s planning efforts in general. As the local level of government responsible for protecting public health, safety and welfare, Ravalli County is the appropriate agency for translating citizen goals into effective public policy consistent with the Montana Constitution.

The Growth Policy is designed to accommodate and facilitate district level definition of local goals and policies within the broad framework of countywide goals and policies.

Development of the Ravalli County Airport is consistent with the Ravalli County Growth Policy and Ravalli County’s planning efforts. Development Alternative 1 is not anticipated to result in impacts to land use as it is a ‘no action’ alternative.

4.5.1 SCOPE

As the fastest growing county in Montana from 1990 to 2000, Ravalli County’s population increased from 25,010 to 36,070 at a rate of approximately 3.75% per year. From 2000 to 2007 the population increased from 36,070 to 43,510 at a rate of approximately 2.15% per year. If this present 2.15% rate of growth continues the county could reach a population of over 45,000 by 2010 and over 63,000 by 2020.

While this high rate of growth is not expected to continue, it is a possibility. The challenge to manage growth in a responsible manner is very real to Ravalli County.

The Ravalli County Growth Policy is designed to establish a comprehensive set of long-range goals and goal-related policies to guide future growth and development. It seeks to provide an increased level of predictability to land owners, neighbors, and developers about where and how growth can be accommodated in ways that are compatible with fiscal and environmental concerns.

The Policy is designed to guide growth toward areas where it is expected and where it can be accommodated. It seeks to promote desired, sustainable growth.

All of the following actions taken by the County are likewise in keeping with the Airport in its projected growth.

Countywide Growth Policy, Goal 4.1: Encourage development that will minimize or avoid additional costs to existing taxpayers.

Action 4.1.1: Encourage development near existing roads and other infrastructure.

Action 4.1.2: Encourage cluster development and infill that reduces the need for new roads and road maintenance.

Action 4.1.3: Encourage use of a Neighborhood Plan to define areas where compatible growth is appropriate, and where subdivision review may be expedited as an incentive.

Countywide Growth Policy, Goal 4.2: Consider the cumulative impacts of development as part of subdivision review.

Action 4.2.1: Initiate and maintain a subdivision database (including maps) to describe all approved and recorded plats and Certificates of Survey.

Action 4.2.2: Incorporate subdivision data in planning staff reports.

Countywide Growth Policy, Goal 4.3: Upgrade the availability of relevant information to facilitate more informed decision-making about new development.

Action 4.3.1: Support the development and maintenance of a comprehensive land use database that includes current land use, approved but not built subdivisions, and water resource data.

Countywide Growth Policy, Goal 4.4: Improve and maintain existing infrastructure and public services.

Action 4.4.1: Identify and inventory existing infrastructure, parks and public service deficiencies.

Action 4.4.2: Develop a capital improvement program for each element of infrastructure in the county.

Action 4.4.3: Develop a long-range transportation plan for the east side highway.

Action 4.4.4: Encourage car-pooling or other share-a-ride programs to conserve energy and reduce highway traffic in the Bitterroot Valley.

Action 4.4.5: Encourage and explore feasibility of development and/or expansion of public transportation (bus/train) facilities.

Action 4.4.6: Support the work of the Ravalli County Transportation advisory Committee, which is updating its five-year plan.

Action 4.4.7: The Airport Influence Area defines existing and future airport land needs while guiding any proposed expansion to assure land use compatibility with existing and future residential areas. Said planning process should include local residents and property owners.

Action 4.4.8: Encourage a system of pedestrian and non-motorized travel-ways.

Over the next 10 years, projected population growth will be primarily focused on existing population and community centers, and there will be a significant rural non-farm population growth. The rural farm population will experience the lowest growth rate of the three classifications.

4.5.2 SUMMARY OF LAND USE

The Montana Department of Revenue (DOR) has provided the most recent land use classification data for Ravalli County. Although this classification reflects use for taxation purposes, it is the best available information description of land use throughout the county:

<u>Land Use Classification</u>	<u>Acres in:</u>	
	<u>2007</u>	<u>1998</u>
Agricultural:		
Irrigated	42,819	46,312
Non-Irrigated	4,956	5,841
Wild Hay	1,137	1,244
Grazing	<u>121,302</u>	<u>144,186</u>
Total:	172,214	197,583
One-acre homesteads on agricultural land:	1,623	1,899
Forestland (privately owned)	96,961	103,886

One-acre building site on forestland:	481	245
Non-qualifying agricultural land (20-160 acres):	36,788	24,574
One-acre building sites on non- qualifying agricultural land:	755	499
Tract land (less than 20 acres):	51,788	39,172
Commercial tracts (incomplete data)	1,787	1,466
Industrial:	267	139
City/town (incomplete data):	259	142
Golf course land:	385	80
Eligible mining claims:	0	30
Tax exempt property		
Agricultural & non-qualifying agricultural land:	32,720*	30,174
Residential (incomplete data):	772*	326
Commercial (incomplete data):	392*	357
Forestland:	817,812*	19,818**

* Data reflects 2002 figures.

**Ravalli County is presently adding additional exempt property to the assessment roles. In 1998, most of the land owned by the U.S. Forest Service and the State of Montana was not on the tax roles. Thus, the figures for exempt acreage listed above are low and do not reflect accurate numbers.

Source: Department of Revenue, Ravalli County, July 19 and Nov. 11, 2002, Oct. 31, 2008.
Ravalli County Planning Department, August 19, 2008.

As of August 19, 2008, there were approximately 74 conservation easements recorded in the county with a total area of 32,027 acres. These easements affect both public and private land. About half of these easements are held by the Montana Land Reliance. Others involve the Bitterroot Land Trust, Inc., U.S. Forest Service, Five Valleys Land Trust, Montana Dept. of Fish, Wildlife and Parks, the Nature Conservancy, and the Rocky Mountain Elk Foundation.

4.5.3 SUBDIVISION ACTIVITY

The Ravalli County Planning Office maintains a log of subdivision activity as shown on the following table:

TABLE 4-2: Ravalli County – Subdivision Approvals

	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>
Major:	2	4	12	12	14	8	10	4	8	8	6
Minor:	24	49	75	88	100	97	49	50	35	36	37
Lots:	124	213	423	440	463	521	295	195	140	209	148
Acres:	433	628	1898	2039	2490	4800*	1873	1124	526	533	658

* Includes 2600 ac. Bitterroot Stock Farm

	<u>2003</u>	<u>2004</u>	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>YTD 2008</u>
Major:	3	6	11	14	8	7
Minor:	22	37	31	20	18	12
Lots:	146	237	422	286	819	163
Acres:	290	642	653	959	835	455

Source: Ravalli County Planning Department – reliable data from 2002 is not available. As of 8/18/2008.

4.5.4 EXISTING ZONING DISTRICTS AND RESTRICTIVE COVENANTS

Ravalli County currently contains 41 zoning districts established under 76-2-201 MCA as of December 2000. They extend from Florence southerly to Lost Horse Road south of Grantsdale. These zoning districts are also shown on school district land use maps.

The total area of these zoning districts is approximately 25,342 gross acres, or about 39.6 square miles. This represents less than two percent of the total area of Ravalli County.

There are a number of acres in the County that are encumbered by protective covenants. Ravalli County recognizes the use of restrictive covenants drafted by area landowners. Those covenants are generally found in each subdivision and are approved by the County.

4.5.5 HOUSING STARTS

According to information supplied by the Montana Building Industry Association, Ravalli County experienced the following housing construction activity:

TABLE 4-3: Ravalli County Housing Starts

<u>Year:</u>	<u>Housing Starts:</u>	<u>Year:</u>	<u>Housing Starts:</u>
1996	367	2002	394
1997	313	2003	346
1998	334	2004	433
1999	396	2005	446
2000	346	2006	402
2001	396	2007	167*

- Through June of 2007

4.5.6 PROJECTED TRENDS

Accurate future land use trends are difficult to project. If current trends continue, the county will experience more development, primarily residential, in a scattered pattern. Commercial and industrial development will likely locate near existing service centers and along major travel corridors. With the adoption of the Growth Policy and its implementation, the County anticipates that growth will occur more in accordance with the goals and policies of the Growth Policy as follows:

- Loss of farm, ranch, and forest lands may be minimized, compared to such losses without a Growth Policy.
- New development located in the vicinity of agriculture and forestry operations should be compatible with these uses.
- Development should be located in areas, such as near roads and other infrastructure, so as to minimize additional costs to taxpayers.
- As new development occurs, air and water quality should be maintained and protected and natural resources should be conserved.
- Residential and commercial growth should be encouraged adjacent to existing development.
- Tools such as neighborhood plans, voluntary zoning districts, transfer of development rights, etc., may be utilized at the local level to address growth and identify areas where different types of development should and should not occur. Development standards may be utilized to ensure development design.

4.5.7 LAND USE ACTIONS

Several different land use types exist at RCA. The area on each side of the entrance road to the airport has been planned for use as a business park. At the current time, the county has established one of its gravel pits and the Hamilton Gun Club has its shooting range in the area. The southwestern region of the airport is presently agricultural, but is planned for hangar development. To the east of the airport, an existing business (Daly Ditches Irrigation Company) is present. While all of the aforementioned facets are present, the majority of the region around the airport is currently agricultural. The creation of subdivisions in these agricultural lands is a possibility that has already begun south of the airport. Ravalli County has established

an Airport Influence Area around the airport. The Airport Influence Area Resolution will provide additional protection for the airport.

Ravalli County has adopted and revised a set of minimum standards that prohibits residential facilities on the airport. In the past, residential use of the airport was encouraged. Following the implementation of the minimum standards the only residential facilities allowed on the airport are those that were grandfathered in prior to their establishment. These grandfathered residential facilities are allowed until their leases expire, at which time the new lease will prohibit residential use.

The existing and proposed RCA property boundaries are as indicated on the Airport's Exhibit "A" property map included in Appendix V – *Airport Plans and Construction*. All airport facilities are located on land that is owned in fee. Portions of the existing Runway Protection Zones (RPZs) are controlled by easement.

4.5.8 PREFERRED LAND USE PATTERN

A Preferred Land Use Pattern is a graphic tool to illustrate a desired future land development pattern within an area of the County, based on the adopted goals and policies. It is not intended to serve as a "growth control" device, nor does it imitate or replace zoning districts. It shows a "direction" for growth to accommodate future needs and demands, while respecting physical and economic factors such as floodplains, critical wildlife habitat and water quality concerns. It seeks to increase the predictability of compatible land development impacts and improve communication of meaningful information during subdivision review process.

4.5.9 NEIGHBORHOOD PLAN

Neighborhood plans are one implementation tool that can be used by neighborhoods, communities, or regions within the County to further the goals and policies of the Growth Policy. State law allows a growth policy to include one or more neighborhood plans that covers a geographic area within the boundaries of the County and addresses one or more elements of the Growth Policy in more detail. Neighborhood plans must also be consistent with the Growth Policy.

The Ravalli County Growth Policy anticipates that the more detailed planning efforts required for Neighborhood Plans could take place for a specific neighborhood or a larger region within the County. Whether a neighborhood plan covers a community center, school district, or some other geographic area, it will meet the statutory requirements noted above. Neighborhood plans are not limited to using school district boundaries. Neighborhood planning completed at the regional or vicinity level will provide the following for the area in question: more detailed information about the area, further articulated goals and policies, and specific guidance on land use.

4.5.10 AIRPORT INFLUENCE AREA

Ravalli County Commissioners unanimously approved regulations governing the development of the Airport Influence Area on November 20, 2003.

Required by state law and encouraged by the Federal Aviation Administration and the Montana Aeronautics Division, the Airport Influence Area is intended, according to statute, to protect the safety of the flying public and those who live in the vicinity of an airport, as well as to limit nuisance lawsuits against local governments over noise.

The regulations are designed to prevent structures and trees from penetrating heights that are considered important to air space surrounding the airport. But State law requires a permitting system governing everything from landscaping to construction, and all three commissioners voiced opposition to the permitting system.

The regulations limit the height of new construction and require permits for development within the Airport Influence Area depicted on the attached exhibit at the end of this section.

One year after the creation of the influence area, commissioners were required to adopt regulations for the area, restricting new development in the areas closest to the airport and requiring permits for some construction, alterations, tree planting and other projects depending on height restrictions. This has been completed by the Ravalli County Commissioners.

4.6 CONSTRUCTION

4.6.1 PROBABLE IMPACTS DURING CONSTRUCTION

Construction activities could cause specific environmental temporary impacts that are adverse in nature, but localized to the project site. These temporary impacts and their degree of adversity would be reduced as construction activities are completed. The following impacts are anticipated during the construction of the proposed action:

- Temporary increases in noise levels due to the operation of construction equipment.
- Temporary and minor impacts to air quality due to vehicle emissions from construction equipment and particulate generation (dust) from the construction operations.
- Potential for surface water contamination from construction activities.

4.6.2 MITIGATION FOR PROBABLE IMPACTS

The following mitigation is proposed for those impacts listed above:

- Noise levels are proposed to be maintained within acceptable levels through restriction of work hours to reasonable day time operations.
- Vehicle emissions are to be in compliance with EPA standards and dust control will be required of the Contractor throughout the project (water, calcium chloride, etc.)
- Surface waters will be protected by implementing Best Management Practices and installing silt fencing, earthen dams, and erosion control measures to prevent contamination from either construction equipment fuels and oils or erosion from disturbed areas.

4.7 SECTION 4(f)

DEPARTMENT OF TRANSPORTATION 4(f) AND 6(f) LANDS

Neither Section 4(f) or Section 6(f) statements would be required since no park, recreation area, federal park, state park, or wildlife refuges will be affected by anticipated development, nor are any properties acquired or improved with funds from the Land and Water Conservation Act.

4.8 FEDERALLY-LISTED ENDANGERED AND THREATENED SPECIES

4.8.1 PROJECT AREA DESCRIPTION

The airport is situated in a valley with significant mountainous terrain to the south and west. East of the airport property, the topography is characterized as valley bottom transitioning into the foothills of the Sapphire Mountains. North of the airport property, the topography is characterized as valley bottom, the Bitterroot River floodplain, and community developments. The property immediately surrounding the airport is used primarily for agricultural purposes with residential developments south of the airport. The Ravalli County Airport's elevation is 3,644 feet mean sea level with the mean maximum temperature of the hottest month 84 degrees Fahrenheit. The airport property comprises approximately 318.87 acres of which 307.59 acres are owned in fee by Ravalli County. The remaining 11.28 acres are controlled by easement.

4.8.2 DESCRIPTION OF SPECIFIC AREA AFFECTED BY ACTION

The area that will be affected by the airport expansion is predominantly open fields and wetland areas resulting from surface irrigation used for grazing and agriculture immediately adjacent to the existing airport facility. Agricultural fields located to the north of Gird Creek and the existing runway may also be impacted. The north end of the proposed parallel taxiway and runway may cut into a topographic bench approximately 30 feet higher in elevation than Gird Creek (Alternatives 2, 3 and 4). Agricultural fields located above the topographic bench are vegetated predominantly with alfalfa (*Medicago sativa*). Cattle grazing is occurring in the southeastern corner of the property

north of Tammany Road. Gird Creek, and the adjacent depressional and riverine wetland areas will be impacted by the construction of a new runway (Alternatives 2, 3 and 4). An unnamed tributary to the Republican Ditch flows north along the western boundary of the airport property, from Tammany Lane north to the northwestern property boundary. Expansion and construction will occur on the north and east side of the existing runway (Alternatives 2, 3, and 4). Due to the creek's location on the west side of the property, the drainage and its associated fringe wetland area are not expected to be impacted by project implementation.

4.8.3 ALTERNATIVE DESCRIPTION

Alternative 1: This is described as a "No Action" alternative.

Alternative 2: This alternative includes the construction of a new 75-foot-wide runway approximately 80 feet east of the present runway, and the extension of the existing parallel taxiway to the north. This area of impact for this alternative includes an artificial ditch and associated wetland, depressional wetlands, a portion of Gird Creek and its associated wetland fringe, and an agricultural area along a topographic bench (north of the existing runway).

Alternative 3: This alternative includes the construction of a new 75-foot-wide runway approximately 240 feet east of the present runway, and the extension of the existing runway to the north to serve as the parallel taxiway. This area of impact for this alternative includes an artificial ditch and associated wetland, depressional wetlands, a portion of Gird Creek and its associated wetland fringe, and an agricultural area along a topographic bench (north of the existing runway).

Alternative 4: This alternative includes the construction of a new 75-foot-wide runway 400 feet east and parallel to the existing runway and extend the existing runway to the north to serve as the parallel taxiway. The area of impact for this alternative includes artificial ditches and associated wetlands, depressional wetlands, a portion of Gird Creek and its associated wetland fringe, and an agricultural area along a topographic bench (north of the existing runway).

4.8.4 METHODOLOGY

An off-site literature review was completed to gather information concerning T&E species, candidate species, and their habitat. The literature review consisted of an internet search to gather species information from applicable sources and publications. Sites such as the MNHP and Montana Fisheries Information Database sites were consulted. Information was also solicited from the United USFWS and MFWP. This information was utilized to address agency concerns, identify the species present, and assess potential impacts to those species.

An on-site field investigation was conducted on September 29 and 30, 2004, by Morrison-Maierle, Inc., Environmental Services Group. The field investigation included an assessment of the project area for possible use by species indicated as T&E and

candidate in a written response to a request for information letter from R. Mark Wilson from the USFWS. Two different methodologies were utilized to efficiently and accurately assess the property for the presence of T&E species and their habitat. In areas that were determined unlikely harbor potential habitat for T&E species, 30-meter-wide transects were walked throughout the project impact area. These areas (not likely supporting T&E species habitat) included the agriculture fields located south of Tammany Lane, the agriculture fields north of the existing runway, the topographic bench, and the adjacent open fields parallel and east of the existing runway area. In areas such as Gird Creek, the associated fringe wetlands, and other unnamed drainages on the property where potential habitat for T&E species was determined to be present, 1-meter-wide transects were walked and the areas were intensively investigated. Habitat specifications for each T&E species were evaluated within the property to determine potential presence and utilization of the subject property.

4.8.5 THREATENED, ENDANGERED, AND CANDIDATE SPECIES

A written response to a request for information letter from R. Mark Wilson, field supervisor with the USFWS identified the following T&E species as potentially occurring within the project area. The site was evaluated for each of these species according to habitat specifications. Results from this evaluation are provided in the following sections of this T&E Analysis. The following table states the current rank and status of the T&E species.

TABLE 4-4: Rank and Status of T&E Species

Species	Rank and Status
Canada Lynx (<i>Lynx canadensis</i>)	Global Rank: G5 State Rank: G3 USFWS: Threatened USFS: Threatened BLM: Special Status
Bull Trout (<i>Salvelinus confluentus</i>)	Global Rank: G3 State Rank: S2 USFWS: Threatened USFS: Threatened BLM: Special Status
Bald Eagle (<i>Haliaeetus leucocephalus</i>)	Global Rank: G4 State Rank: S3B, S3N USFWS: Delisted USFS: Threatened BLM: Special Status
Gray Wolf (<i>Canis lupus</i>)	Global Rank: G4 State Rank: S3 USFWS: Threatened, Nonessential experimental USFS: Endangered BLM: Special Status
Yellow-Billed Cuckoo, Western Population (<i>Coccyzus americanus</i>)	Global Rank: G5 State Rank: S3B USFWS: Candidate species USFS: None BLM: None

4.8.5.1 CANADA LYNX

Description of Habitat

The Canada lynx (*Lynx canadensis*) is distributed across northern North America from western Alaska to eastern Newfoundland. The distribution and abundance of Canada lynx are closely associated with those of their primary prey species, the snowshoe hare (*Lepus americanus*). In Montana, snowshoe hares are most abundant in young, dense stands of lodgepole pine (*Pinus contorta*). Canada lynx also feed on other small mammals including voles and squirrels, and birds such as grouse (MNHP 2004). Late successional forest stands are required for Canada lynx denning. Den sites in the western states are characterized by dense canopy closure and a high density of downed trees, which provide both horizontal and vertical cover. Canada lynx require either the adjacency of both stand types or appropriate travel corridors consisting of closed canopy regions greater than 6.5 feet in height that are interposed between foraging and denning habitats (Foresman 2001).

On November 9, 2005, the USFWS proposed a rule to designate critical habitat for the Canada lynx in an approximate area of 69,761 square kilometers (26,935 square miles). This proposed critical habitat designation covers portions of northern Maine, northeastern Minnesota, the northern Rocky Mountains (northwestern Montana and a small portion of northern Idaho), and the Okanogan area of the northern Cascades in north-central Washington. The northern Rocky Mountains area (Montana and Idaho) covers approximately 27,868 square kilometers (10,760 square miles) in portions of Boundary County, Idaho; and Flathead, Glacier, Granite, Lake, Lewis and Clark, Lincoln, Missoula, Pondera, Powell, and Teton Counties in Montana (USFWS 2005a). According to the map provided on the USFWS Canada lynx website, proposed Canada lynx critical habitat does not exist within close proximity to the project site. Therefore, no further analysis of proposed Canada lynx critical habitat is provided in this Threatened and Endangered Species Analysis.

According to a response letter from the USFWS, Canada lynx are identified as a "resident in area" within western Montana in montane spruce/fir forests. Canada lynx are solitary animals often associated with remote areas and high elevations. According to Foresman's *The Wild Animals of Montana* (2001), the habitat specifications of both the snowshoe hare and the lynx are not found within the project corridor. Foraging and denning habitat does not exist in the vicinity of the Ravalli County Airport. The project area is open converted agricultural fields, and wetland areas with no forested areas. Dense stands of timber with both vertical and horizontal cover are located in the forested mountain areas outside of the project area to the west and south, but not near the airport in the valley bottom. There have been no reported confirmed or unconfirmed sightings of Canada lynx in the project area.

Expected Status of T&E Species During and After Project Completion

The current status of the Canada Lynx as stated above is threatened. There are no anticipated changes, short or long term, during and after project completion to this status.

Analysis of Direct, Indirect, and Cumulative Effects

Evidence indicates that proposed construction activities will have no direct, indirect, or cumulative effects on Canada lynx populations. Adequate travel corridors, foraging, and denning habitat for the Canada lynx are non-existent in the project area and implementation of the project is not anticipated to affect this species.

Determination of Effects

Due to the lack of habitat, vicinity to urban interface, and no record of sightings of Canada lynx in the area, it is determined that project implementation will have “**no effect**” on Canada lynx individuals or populations for all proposed alternatives. A discussion of impacts and a determination of effects by alternative is provided below.

Impacts by Alternative

Alternative 1: This “No Action” alternative will have “**no effect**” on Canada lynx. As a result of this determination, no mitigation measures are required for this alternative.

Alternatives 2, 3, and 4: Areas impacted by these alternatives are not identified as known or preferred Canada lynx habitat. Therefore, implementation of these alternatives will have “**no effect**” on Canada lynx individuals or habitat. As a result of the no effect determination and the absence of Canada lynx habitat, no mitigation measures are required for these alternatives.

4.8.5.2 BULL TROUT

Description of Habitat

In Montana, west of the continental divide, bull trout are found throughout the Clark Fork, Kootenai, and Saskatchewan River drainages (MNHP 2004). Bull trout are found primarily in upper tributary streams, and several lake and reservoir systems. Bull trout are sensitive to high sediment levels in their spawning streams, as fine sediment can clog the interstitial spaces in the substrate and suffocate the developing embryos before they hatch. Habitat requirements for the spawning bull trout include cold unpolluted water, clean gravel, cobble substrate, and gentle stream slopes (USFWS 2003). Water temperature requirements for spawning has to be below 48 degrees Fahrenheit, and substrate must be a gravel/cobble with high permeability and substrate particles smaller than 0.25 inch in diameter. Bull trout eggs require an incubation period of 4 to 5 months before hatching occurs in late winter or early spring. Spawning usually occurs after mid-September in low gradient third and fourth order streams.

On September 26, 2005, the USFWS designated critical habitat for the Klamath River, Columbia River, Jarbidge River, Coastal-Puget Sound and Saint Mary-Belly River populations of bull trout in the coterminous United States. This designation totals approximately 3,828 miles of streams and 143,218 acres of lakes in Idaho, Montana, Oregon, and Washington. In Montana, the critical habitat designation covers approximately 1,058 stream miles and 31,916 acres of lakes or reservoirs (USFWS 2005b). The mainstem of the Bitterroot River is identified as designated critical habitat through this ruling. However, Gird Creek, Republican Ditch (Gird Creek terminates into this ditch), and Willow Creek (Republican Ditch terminates into Willow Creek) were not designated as critical habitat. Therefore, an analysis of bull trout critical habitat is not included in this Threatened and Endangered Species Analysis.

According to R. Mark Wilson, field supervisor with the USFWS, bull trout populations occurring in the general vicinity of the project are located in cold water streams and lakes found in the Bitterroot subbasin, including Camp Creek. A search of the Montana Fisheries Information Database concluded that Gird Creek may have a rare occurrence of bull trout from river mile 7.2 to 13.8. This information is extrapolated based on surveys, but the specific survey information is not available (MFWP 2004). The project area is located approximately at river mile 3.3. Information was provided by Chris Clancy, MFWP's Bitterroot fisheries biologist, concerning fisheries survey information on Gird Creek. Chris Clancy stated that the distribution of fish species in Gird Creek is typical of streams in the area with the lower reaches supporting a variety of fish similar to the river, such as rainbow trout and brown trout, and the upper reaches supporting westslope cutthroat trout and bull trout (Clancy 2004). On March 10, 2005, Chris Clancy completed electrofishing surveys of two 300-foot reaches of Gird Creek within the airport property. Approximately three longnose suckers (*Catostomus catostomus*) were the only fish identified within the reaches. Mr. Clancy also stated that the MFWP fisheries information for Gird Creek near the Teller Wildlife Refuge is not actually the historic Gird Creek channel, but may receive surface water from Gird Creek. A fisheries survey performed on August 15, 1996, located one, 5-inch-long, bull trout at river mile 12.4. Another occurrence of a documented bull trout in Gird Creek was at river mile 5.4 on July 31, 1978. Gird Creek is channelized as it enters the valley floor, and flow is controlled by irrigation ditches re-entering the creek at various points throughout the valley. Field investigation revealed that within the project area, quality bull trout spawning habitat specifications do not exist. The water temperature taken at 11:30 am on September 30, 2004 was 60.8 degrees Fahrenheit, substrate composition was predominantly fine silt (90 percent) with very few gravels (5 percent) and cobbles (5 percent). Bull trout are most likely to be found towards the headwaters of Gird Creek where water temperatures stay colder and stream substrate is more suitable for spawning.

Expected Status of T&E Species During and After Project Completion

The current status of the bull trout is threatened. There are no anticipated changes, short or long term, during and after project completion to this status.

Analysis of Direct, Indirect, and Cumulative Effects

After reviewing survey documentation, consulting with the MFWP fisheries biologist, and utilizing the field investigation of in-stream habitat for bull trout, it was concluded that an incidental occurrence of bull trout may occur within the impacted area of the project, but bull trout are not likely to reside in the reach of Gird Creek associated with the project. Therefore, it appears that there will be no direct, indirect, or cumulative effects on bull trout.

Determination of effects

While no bull trout have been documented in the reaches of Gird Creek that the project encompasses, there is the possible occurrence of salmonids utilizing the creek as a migratory corridor. Habitat specifications are absent in the project area, and the regional fisheries biologist stated that bull trout typically occur in the upper reaches of streams in the area. Therefore, it has been determined that implementation of the proposed project activities "may effect, but are not likely to adversely affect" bull trout for all proposed alternatives, aside from the "No Action" alternative. A discussion of impacts and a determination of effects by alternative is provided below.

Impacts by Alternative

Alternative 1: No impacts to bull trout will occur with this "No Action" alternative. This no action alternative will have "**no effect**" on bull trout. Therefore, there are no mitigation measures required for this alternative.

Alternatives 2, 3 and 4: Based on the information obtained from USFWS, MFWP, and the results of the field investigation, potential moderate impacts to bull trout are anticipated from construction activities associated with Alternatives 3 and 4. A portion of Gird Creek may be culverted and in-stream habitat altered in this area. However, habitat specifications for bull trout do not exist within the reaches of Gird Creek potentially affected by project activities. An incidental occurrence of this species may occur in the general area. However, preferred habitat is not present and a recent survey of Gird Creek did not indicate the presence of bull trout in the reaches associated with the project. Given the possible occurrence of salmonids utilizing Gird Creek as a migratory corridor, potential "**moderate impacts**" to bull trout may be encountered with the implementation of this alternative.

Mitigation Measures

Alternatives 2, 3 and 4: Complete instream construction work within the shortest amount of time feasible and avoid the wetted channel wherever practicable.

If necessary, install temporary flow/velocity dissipaters immediately upstream of the proposed construction area to reduce anticipated levels of sedimentation and turbidity during construction. Obtain the necessary permits associated with the installation of temporary instream flow/velocity dissipaters.

Obtain the necessary permits for construction activities affecting known waters of the U.S. Regulatory requirements will likely include an SPA 124 permit (administered by MFWP), a Clean Water Act Section 404 Nationwide Permit (administered by USACE), and a 318 Authorization for short-term turbidity exemption (administered by DEQ).

Store excavated substrate from the stream outside of the wetted channel in a manner that will prevent increased sedimentation to the drainages during construction activities.

Mitigation may include the restoration of the natural channel, pattern, dimension, and profile of Gird Creek in reaches within the airport property that have been historically straightened or simplified. To offset proposed impacts to the riparian area, improve/create a commensurate riparian acreage within the airport property to provide improved fisheries habitat. Where practicable, avoid or minimize disturbance to riparian vegetation.

Re-vegetate all disturbed areas with desirable species and implement bank stabilization measures for disturbed channel banks. Re-vegetation strategies should be monitored and maintained until species have become well established.

Implement Best Management Practices (BMP) (such as silt fences, coffer dams, or hay bale dikes) to control erosion, sedimentation, and turbidity resulting from proposed construction activities.

Fish passage structures will be installed utilizing bankfull width plus 10 percent to provide for flow complexity within each structure. Also use natural stream channel techniques where necessary to maintain the same stream gradient as the existing conditions, as suggested by Chris Clancy, State fisheries biologist.

Ensure that all waste fuels, lubricating fluids, and other chemicals are disposed of properly. Construction equipment should be inspected daily during operation to ensure hydraulic, fuel, and lubrication systems are in good condition and free of leaks to prevent these materials from entering the stream. Vehicle servicing, refueling, fuel storage areas, construction equipment staging, and materials storage areas should be sited a minimum of 15 meters (50 feet) from the OHW. All fluids and materials should be properly stored in containers to prevent unnecessary spills from entering the stream.

4.8.5.3 *BALD EAGLE*

Description of Habitat

The bald eagle can be found throughout Montana, although the majority of the state's population occurs in the western third of the state (MNHP 2004). Resident bald eagles prefer habitats that commonly include areas within close proximity (2.5 miles) to coastal areas, bays, rivers, lakes, or other bodies of water that reflect the general availability of primary food sources, including fish, waterfowl, and seabirds. Bald eagles preferentially roost in tall trees or on cliffs. They typically select the larger, more accessible trees and avoid areas with nearby human activity such as boat traffic, pedestrian use, and

development. Preferred nest trees include pine, spruce, fir, cottonwood, oak, poplar, and beech (MNHP 2004).

A response letter from the USFWS identified bald eagle occurrence in the area as resident's year-long, spring/fall migrants, and nesting occurring in forested riparian areas. The Ravalli County Airport is within close proximity to the Bitterroot River (approximately 1 mile), which provides nesting trees and food sources for the eagles. Within the project area two areas may harbor roosting or nesting habitat for bald eagles. One small area (approximately 2 acres) in the northwest corner of the property contained tall cottonwood trees that would provide adequate nesting habitat. Another row of tall cottonwood trees exists along the top of the bench to the north of the runway could provide a second area of adequate nesting habitat. The area in the northwest corner of the property was directly adjacent to a shooting range, which would discourage bald eagles from using these trees to nest. A significant fishery does not exist within the project area to serve as a primary food source for eagles. Small rodents, and carrion occur on-site and could be considered a food source, but with the amount of human activity, it is unlikely bald eagles would utilize the area. No individual bald eagles were sighted and no nests were noted in or near the project site during the field investigation. It is possible that an incidental occurrence of a bald eagle may take place at the project site. However, given the nearby human activity from residences and aviation traffic, the project site does not harbor valuable habitat for the bald eagle.

Expected Status of T&E Species During and After Project Completion

At the time of the preparation of the previous version of this document (April 2007), the bald eagle (*Haliaeetus leucocephalus*) was listed on the U.S. Fish and Wildlife Service (USFWS) Montana County List of Threatened, Endangered, Proposed, and Candidate Species for Ravalli County and maintained federally-threatened status with USFWS. As of August 8, 2007, the bald eagle was de-listed as a federally-threatened species and no longer is afforded protection under the Threatened and Endangered Species Act. However, the bald eagle is provided protection under the Migratory Bird Treaty Act of 1918, the Bald and Golden Eagle Protection Act of 1940, the Montana Bald Eagle Management Plan of 1994, and remains a Montana state-listed species of concern. The Bald Eagle is currently listed as "threatened" by the U.S. Forest Service and "special status" by the Bureau of Land Management.

Analysis of Direct, Indirect, and Cumulative Effects

After analysis, it was determined that project implementation will have no direct, indirect, or cumulative effects on bald eagles. This was determined due to the fact that no significant increase in air traffic is expected with project implementation, and bald eagles are not known to utilize the area within the airport property. Increased noise levels corresponding with an expanded area of impact (Alternatives 2, 3 and 4) for the new runways are possible. However, it is unlikely that bald eagles would be affected by an increased area of potential noise as bald eagles do not currently use and would continue to avoid the areas adjacent to a newly constructed runway.

Determination of Effects

Due to limited amount of quality roosting and nesting habitat on site, lack of significant food sources, and urban interface with human and airport activity, it has been determined that implementation of the proposed project will have “**no effect**” on the bald eagle for all proposed alternatives. A discussion of impacts and a determination of effects by alternative is provided below.

Impacts by Alternative

Alternative 1: This “No Action” alternative will have “**no effect**” on bald eagles and no mitigation measures are required for this alternative.

Alternatives 2, 3 and 4: The implementation of these alternatives may result in the removal of several (currently estimated to be three or fewer) large decadent cottonwood trees located along the rim of the topographic bench north of the existing runway. These trees could be utilized by bald eagles as perching habitat. However, given the amount of human activity in close proximity to this area and the lack of an abundant food source, it is very unlikely that the removal of these trees would have any affect on bald eagles. Therefore, it is concluded that implementation of Alternatives 2, 3 and 4 will have “**no effect**” on bald eagles.

Mitigation Measures

Alternatives 2, 3 and 4: Mitigation measures should include monitoring the project corridor for the presence of bald eagles and nesting sites throughout the duration of construction activities. In the event that a bald eagle nest is identified within the project corridor before or during construction activities, consultation with regional USFWS biologists would be required to determine adaptive management strategies.

4.8.5.4 GRAY WOLF

Description of Habitat

Gray wolves (*Canis lupus*) were essentially extirpated from Montana and the remainder of the United States in the early 1900's due to conflicts with people. Dispersing packs from Canada were re-established in Glacier National Park in the 1980's and gray wolves were reintroduced to Yellowstone National Park and central Idaho in 1995 and 1996. Populations resulting from these reintroductions and dispersal from Canada have since expanded into areas of Montana. Gray wolves have expanded in numbers and distribution in Montana and met the biological recovery goals for the Northern Rocky Mountains established by the USFWS. This has resulted in implementing the process of delisting the gray wolf from the T&E species list (MNHP 2004). The current status of the gray wolf remains listed as threatened.

The gray wolf exhibits no particular habitat preference. Gray wolves usually occur in forested areas with few roads and human disturbance, but are establishing new packs

in Montana that have demonstrated greater tolerance of human presence and disturbance. Gray wolves are territorial throughout the year and have large home ranges that can encompass up to several hundred square miles. In Montana, gray wolves breed in mid- to late-February with gestation lasting approximately 63 days (MNHP 2004). The offspring are born in late April in an underground burrow and pups emerge from the den in approximately 3 weeks. Gray wolves are opportunistic carnivores that predominantly prey on large ungulates (MNHP 2004). Prey species in Montana typically include deer, elk, and moose (MFWP 2004). However, bison, domestic livestock, and alternative prey such as rodents, vegetation, and carrion, are also utilized.

The Ravalli County Airport occurs within the central Idaho non-essential experimental population area, which includes portions of Idaho south of Interstate 90 and west of Interstate 15. It also includes a corner of Montana south of Interstate 90, east of highway 93 as it runs south of Missoula, south of Highway 12 to Lolo pass, and west of Interstate 15. Gray wolves located within an area designated as nonessential experimental populations are treated as proposed species for Section 7 purposes (Wilson 2004).

Incidental occurrences of gray wolves may take place in or near the project area when food sources are scarce in adjacent forested areas. The southeast corner of the airport property, north of Tammany lane contains cattle. Gray wolves have been known to feed on livestock when other food sources are unavailable. Carrion and small rodents also exist on the property, which could serve as a secondary food source. However, given the amount of human activity associated with the nearby residences and airport, it is unlikely that gray wolves would frequent the area and utilize the food sources available. As previously noted, the project corridor is characterized by farmland development, human activity, and aviation and vehicular traffic, all of which degrade the quality of habitat for gray wolves.

Expected Status of T&E Species During and After Project Completion

At the time of the preparation of the previous version of this document (April, 2007) the gray wolf in this area was listed as threatened, non-essential experimental. Wolves were delisted on March 28, 2008. The U.S. Federal District Court in Missoula, Montana, issued a preliminary injunction on July 18, 2008, that immediately reinstated the Endangered Species Act protections for gray wolves in the northern Rocky Mountains. That injunction will remain in place until final resolution of the case.

The Endangered Species Act provisions reinstated by the court are those that were in effect before wolves were delisted on March 28, 2008. All wolves in the southern half of Montana, all of Idaho south of Interstate 90, and all of Wyoming will be managed under the 2005 and 2008 Endangered Species Act nonessential experimental population regulations. To better understand these regulations, please visit the Service's website at <http://www.fws.gov/mountain-priare/species/mammls/wolf/>.

Analysis of Direct, Indirect, and Cumulative Effects

No direct, indirect, or cumulative effects are anticipated on the gray wolf during or after project implementation. This analysis of effects was determined by gray wolves not being known to occur in the vicinity of the airport, lack of forested habitat, and the close proximity of the urban interface.

Determination of Effects

Due to the conclusions in the previous section, it has been determined that implementation of the proposed project will have “**no effect**” on gray wolf individuals or populations in the area for all proposed alternatives. A discussion of impacts and a determination of effects by alternative is provided below.

Impacts by Alternative

Alternative 1: This “No Action” alternative will have “**no effect**” on gray wolf individuals or populations and no mitigation measures are required for this alternative.

Alternatives 2, 3, and 4: Due to the lack of suitable habitat or an abundant food sources for wolves on-site, the project’s proximity to urban interface, and the amount of human activity in the area, it is determined that implementation of Alternatives 2, 3, and 4 will have “**no effect**” on gray wolves.

Mitigation Measures

Alternatives 2, 3, and 4: Mitigation measures designed to avoid and minimize potential impacts to the gray wolf will be limited to ocular monitoring of the project corridor for the presence of gray wolves throughout the duration of construction activities. In the event that gray wolves, or a gray wolf individual, are identified within the project corridor before or during construction activities, consultation with regional USFWS biologists will be required to determine adaptive management strategies.

4.8.5.5 YELLOW-BILLED CUCKOO

Description of Habitat

Breeding and migration information for the yellow-billed cuckoo does not exist for Montana. The habitat information provided is applicable to their known range in the eastern United States. Throughout their range, preferred breeding habitat includes open woodland areas with thick undergrowth in locations such as parks, and deciduous riparian zones. In the West, they nest in tall cottonwood and willow riparian areas. The yellow-billed cuckoo nests in trees, shrubs, or vines, at an average height of 3 to 10 feet above ground (MNHP 2004). Western subspecies require patches of at least 25 acres of dense, riparian forest with a canopy cover of at least 50 percent in both the understory and overstory to nest. Nests are typically found in mature willows. This bird

is rarely found at higher elevations (MNHP 2004). The main diet of the yellow-billed cuckoo is caterpillars. Other food sources include other insects, some fruits, small lizards, frogs, and bird eggs.

According to the Montana Bird Distribution Database, for the latilong 25 quarter D that encompasses the project area, no occurrences of transient/migrant or direct/indirect evidence of breeding of the yellow-billed cuckoo from the years 1998-2003 has been recorded in this area (MNHP 2004). During field investigation no individuals were located and no direct or indirect evidence of breeding were located. However, two areas existed within the property boundary that harbor mature willows, tall cottonwood trees, and thick understory/overstory vegetation. These areas were along the western property boundary, along a creek/riparian area, and along the northwestern property boundary directly west and north of the shooting range. The habitat requirements for the yellow-billed cuckoo are present in this area, however, according to the MNHP species information available on the yellow-billed cuckoo, it states that western subspecies of the cuckoo require large patches of contiguous dense vegetation (25 acres). This area requirement is not present in the project area.

Expected Status of T&E Species During and After Project Completion

The current status of the yellow-billed cuckoo is proposed listing and is a candidate species. There are no anticipated changes, short or long term, during and after project completion to this status.

Analysis of Direct, Indirect, and Cumulative Effects

As stated previously in the habitat section, no documented occurrences of individuals or breeding evidence has been located in the vicinity of the project. No evidence of the yellow-billed cuckoo was located during field investigation. Hence, it was determined that no direct, indirect, or cumulative effects will result on the yellow-billed cuckoo due to project implementation.

Determination of Effects

It is determined that project implementation “**is not likely to jeopardize**” populations of the yellow-billed cuckoo for the reasons stated in the analysis of effects section of this document for all proposed alternatives. A discussion of impacts and a determination of effects by alternative is provided below.

Impacts by Alternative

Alternative 1: This “No Action” alternative “**is not likely to jeopardize**” individuals or populations of the yellow-billed cuckoo and no mitigation measures are required for this alternative.

Alternatives 2, 3 and 4: The implementation of these alternatives may result in the removal of several (currently estimated to be three or fewer) large decadent cottonwood

trees located along the rim of the topographic bench north of the existing runway. These trees could be utilized by yellow-billed cuckoos as nesting and perching habitat. However, given the absence of a thick undergrowth layer (identified as preferred habitat) it is unlikely that the removal of these trees would have any effect on yellow-billed cuckoos. Therefore, it is concluded that implementation of Alternatives 3 and 4 “is not likely to jeopardize” yellow-billed cuckoos.

Mitigation Measures

Alternatives 2, 3 and 4: Where practicable, avoid and minimize damage to and the removal of existing trees within and adjacent to the proposed project areas to maintain adequate desirable habitat for yellow-billed cuckoos.

4.9 ENERGY SUPPLIES, NATURAL RESOURCES, AND SUSTAINABLE DESIGN

Ravalli County has areas with significant natural resources that will continue to be protected in the future as national forestland, wilderness areas, and wildlife refuges.

Ravalli County includes about 2,394 square miles or approximately 1,532,000 acres. Six square miles of this area (about 0.2%) are water features.

Approximately 73% of the county's land area is managed by the federal government, while the Montana Department of Natural Resources and Conservation manages another 2%. The Bitterroot National Forest (BNF) is the single largest landholder. The BNF Forest Plan governs natural resource management decisions and activities.

Over 32,027 acres of land (approximately 50 square miles, or about 2%) in the county are subject to conservation easements. Such easements are consistent with goals and policies to protect and maintain natural resources such as significant wildlife habitat.

No significant energy or natural resource requirements are anticipated as part of the airport development to meet facility requirements. Impacts resulting from the implementation of development Alternatives 1-4 are anticipated to be insignificant as no energy short falls or impacts on energy availability should occur. In addition, there should not be increased consumption from air or ground vehicles that should produce shortages in supplies. No impacts are anticipated to mineral resources.

4.9.1 PROJECTED TRENDS

Increased population and resulting development over the next 10 years will adversely affect air and water quality, natural resources, and wildlife habitat in Ravalli County. Some of these impacts may include the following:

- Development may affect erosion and runoff to streams and rivers.
- Increased use of gravel and/or dirt roads generates dust and contributes to particulate air pollution.

- New subdivisions can impinge on existing natural wildlife habitat and passages.
- Development may affect water quality and quantity due to proliferation of wells and septic systems in a concentrated area.

4.9.2 ENERGY SUPPLY AND NATURAL RESOURCES

No significant energy or natural resource requirements are anticipated as part of any airport development to meet facility requirements. No energy short falls or impacts on energy availability should occur. There should not be increased consumption from air or ground vehicles that should produce shortages in supplies. No impacts are anticipated to mineral resources.

4.10 ENVIRONMENTAL JUSTICE

The Council on Environmental Quality (CEQ) define a low income population as “any readily identifiable group of low-income persons who live in geographic proximity, and, if circumstances warrant, geographically dispersed/transient persons (such as migrant workers or Native Americans) who will be similarly affected by a proposed program, policy, or activity.” The CEQ also defines a minority population as “one that exceeds 50 percent of an affected area, or the population percentage is meaningfully greater than the minority population percentage in the general population or other appropriate geographic analysis.”

Analysis of U.S. Census Bureau information, as well as County and City information, does not indicate the presence of either low-income populations or minority populations residing in the immediate area of the airport. Due that there are no identified populations, and that there are no identified actions that would cause disproportionately high and adverse effects on minority or low income populations if they did exist, it is determined that implementation of Alternatives 2, 3, and 4 will have “**no effect**” on low income or minority populations.

4.11 FARMLANDS

The *Farmland Protection Policy Act (FPPA)*, P.L. 97 98, authorized the U.S. Department of Agriculture (USDA) to develop criteria for identifying the effects of Federal programs on the conversion of farmland to nonagricultural uses. Neal Svendsen of the Natural Resource Conservation Service (NRCS) in Missoula provided a response regarding the conversion of farm land. The proposed action (Alternative 4) will convert approximately 31.8 acres directly and 21.0 acres indirectly. Of this total 52.8 acres it was determined that 42.5 acres are of statewide and local importance. A Farmland Conversion Impact Rating (Form AD-1006) had been completed, submitted and is included in Appendix II – *Agency Coordination and Comments*. The total site assessment points for the highest impact alternative (Alternative 4) is calculated to be 141. This value is below the allowable threshold of 200 published in FAA Order 5050.4b, National Environmental Policy Act Implementing Instruction for Airport Projects. Therefore, implementation of Alternatives 2, 3, and 4 will have “**no effect**” on prime and unique agricultural lands.

4.12 FLOODPLAINS

The Federal Emergency Management Agency Flood Insurance Map of the area does not indicate the presence of a floodplain in the study area. Gird Creek presently flows east to west just north of runway end 16. If development of the airport affects the creek, the facility will be designed to convey the 100 year storm event. The proposed airport development, in its efforts to meet the facility requirements, will not promote or encourage development within a floodplain nor increase flood liability hazards. Airport development is therefore considered to be in compliance with E.O. #11988. The Airport is 1½ miles east of the Bitterroot River floodplain.

4.13 HAZARDOUS MATERIALS

Information pertaining to hazardous material sites was reviewed from the EPA's Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) database. There were no identified sites or issues pertaining to hazardous wastes, substances, or materials. In addition, there have been no sites or issues identified by local authorities, or noted during the reconnaissance-level pedestrian survey conducted for the environmental review of biotic resources. The majority of the subject area is utilized for agricultural purposes with some wetland areas and a few structures noted in the cultural resource survey. While an Environmental Due Diligence Audit (EDDA) has not been conducted, the existing land use indicates that it is not, does not, and does not have the immediate potential for hazardous wastes, substances, or materials.

4.14 HISTORIC AND ARCHEOLOGICAL

Information pertaining to Historic, Archaeological, and Cultural Resources was obtained from the State Historic Preservation Office (SHPO). According to the statewide cultural resource database, there was one known, recorded historic, or archaeological site within the Airport's ownership, the Hedge Ditch, 24RA764, that crosses the airport property. This study contracted with GCM Services, Inc. to develop a "Cultural Resource Inventory" of the airport in May of 2004. This study is included in Appendix X – *Cultural Resource Inventory*.

A cultural resources mitigation plan has been developed to mitigate the projects adverse effects to the two historic airplane hangars currently referred to as the Daily Ditch Irrigation buildings that would result from implementation of Alternatives 2, 3 and 4. Acceptance and approval of the cultural resources mitigation plan would result in the elimination of impacts to cultural resource that would result from implementation of Alternatives 2, 3 and 4. Therefore, impacts to historic properties are not anticipated for any of the identified project alternatives.

4.14.1 HISTORIC PLACES

The Hamilton area and Bitterroot Valley were some of the first locations in Montana to be settled. The following brief descriptions tell of four of the more notable historic

places that are listed on the National Registry of Historic Places. The Daly Mansion is two miles from the Airport.

DALY MANSION – HAMILTON: In the late 1880's, Marcus Daly built his family a summer home in Hamilton. The mansion includes 24,000 sq. ft. on 3 floors with 24 bedrooms, 14 bathrooms and 7 fireplaces.

ST. MARY'S MISSION – STEVENSVILLE: Established in 1841 by Father Pierre DeSmet, who came in response for "Black Robes" by various Indian tribes of western Montana and Idaho.

FORT OWEN: Fort Owen's adobe and log remains preserves the site of the first permanent white settlement in Montana. Major John Owen established the fort as a regional trade center in 1850 and period furnishings and artifacts are displayed in the restored rooms of the east barracks.

RAVALLI COUNTY MUSEUM – HAMILTON: The museum was formerly the Ravalli County Courthouse, built in 1900.

The Cultural Resource Survey identified the Leonardi Place and Daly Ditch Irrigation buildings as potential sites eligible for the NRHP. The review by Mr. Pete Brown (July 8, 2004) determined that the proposed work would not present adverse effects on the sites. Upon further review with the FAA and Montana Historical Society, it has been determined that the Daly Ditch Irrigation buildings (two World War II-era aircraft hangars) are within the extended object-free area of the runway for Alternatives 2 and 3 and Preferred Alternative 4. These buildings must be relocated or mitigated because of their historical significance and that if the structures were torn down, an adverse effect will be realized.

A cultural resources mitigation plan has been developed to mitigate the projects adverse effects on the two historic airplane hangars that constitute what is currently referred to as the Daly Ditch Irrigation buildings. It has been determined that these buildings are significant in the aviation and women's history of the state of Montana's Bitterroot Valley. The first mitigation measure determines the structural integrity of the hangars relative to their potential for relocation. If at least one hangar is structurally sound enough for relocation, then general mitigation measures will follow a track that includes the documentation of the hangars historic past and current structural condition assessments of appropriate methods to relocate the hangars, and the physical relocation, stabilization, and partial structural rehabilitation of the historic hangars. If at least one hangar is found too deteriorated for relocation, then that resource will be fully historically documented to preserve significant vestiges of Montana's past.

A copy of the draft Cultural Resources Mitigation Plan for Two Historic Hangars at the Ravalli County Airport is provided in Appendix XI. Following SHPO acceptance of the mitigation plan, proposed project activities for Alternatives 2, 3 and 4 will not result in adverse impacts to Historic, Archaeological, and Cultural Resources.

4.15 INDUCED SOCIOECONOMIC

Induced socioeconomic impacts deal primarily with the potential for induced or secondary impacts on surrounding communities. Of concern is how the development of a regional airport may affect shifts in patterns of population movement and growth, public service demands, and changes in business activity in the area and the surrounding communities.

Development of the airport is not expected to create any secondary impacts on the surrounding communities due to the fact that Hamilton is a rural community. The proposed project should result in positive socioeconomic impacts to the community in the form of increased aviation, business activity, and air ambulance services. While the proposed action will result in a shift of the noise contours requiring more land, it will not cause significant issues with land use changes as the proposed land to be acquired is largely agricultural. Therefore changes in the distribution of residents and their housing requirements should not occur. The proposed action also shifts the runway activity away from existing educational facilities, as well as established residential areas. Given these circumstances the proposed project activities for Alternatives 2, 3 and 4 are not projected to result in adverse socioeconomic impacts.

4.16 LIGHT EMISSIONS AND VISUAL IMPACTS

Improvements to the nav aids and lighting system at the Ravalli County Airport are necessary. However, there is sufficient service life left in the existing systems to allow them to remain in place until the runway construction takes place. Additionally, the most feasible and most cost effective time to upgrade these facilities is when they are relocated with the runway. The following items should be completed:

- Relocate and rehabilitate the Medium Intensity Runway edge Lighting (MIRL) system to the relocated portion of the runway.
- Equip existing and new taxiway with Taxiway Edge Lighting.
- Relocate PAPIs to the ends of Runway 16-34.

No substantial impacts relating to light emissions are anticipated from airport development for the proposed development Alternatives 1-4.

4.16.1 AIRSPACE, NAV AIDS, AND INSTRUMENT APPROACH PROCEDURES

Air navigation within the Ravalli County Airport airspace is constrained due to surrounding topography. The *Salmon* Very High Frequency Omni-directional Range with Distance Measuring Equipment facility (VOR-DME) is located approximately 75 nm south of the Airport. The *Missoula* VOR-DME is located approximately 45 nm north of the Airport. Victor Airway 231 passes roughly 2 nautical miles east of the Airport linking the *Salmon* and *Missoula* VOR-DME's.

The FAA recently published GPS visual circling approach procedures to the Ravalli County Airport.

4.16.2 OBSTRUCTIONS AND NON-STANDARD FEATURES

The standards for determining obstructions are defined by Part 77. The existing runway at Ravalli County Airport was surveyed assuming a utility runway with visual approaches only, although with a 17,000 pound pavement strength, it is other than utility. Part 77 defines a utility runway as "a runway that is constructed for and intended to be used by propeller driven aircraft of 12,500 pounds maximum gross weight and less". From this survey, the following was found concerning the two approaches.

Runway 16 Approach

No penetrations of this approach noted.

Runway 34 Approach

No penetrations of this approach noted.

Several penetrations were found in other imaginary surfaces though. The horizontal surface is penetrated in the area south/southeast of the airport by a mountain range.

The existing runway Part 77 surfaces were reviewed for larger than 12,500 pound aircraft and the majority of the buildings, power poles, and signs on the west side of Taxiway "A" and several groups of trees in the approach surface can be classified as obstructions. The proposed development of the ALP alleviates this concern as explained in this EA.

While the airport currently has a visual circling approach, the runway was analyzed as a Non-Precision Instrument (NPI) approach to address the worst case scenario. Federal Aviation Regulations Part 77 defines Non-precision instrument runway as "a runway having an existing instrument approach procedure utilizing air navigation facilities with only horizontal guidance, or area type navigation equipment, for which a straight-in non-precision instrument approach procedure has been approved, or planned, and for which no precision approach facilities are planned, or indicated on an FAA planning document or military service military airport planning department." Several groups of trees off the end of Runway 16 are in the imaginary surfaces but not on airport property. Power poles and hangars on the west side of the runway penetrate imaginary surfaces as well. When analyzing the runway as a NPI approach, after it was relocated 400 feet from its current position, only the mountainous region to the south penetrates the imaginary surfaces. This assumes that all trees are cut down because they are on newly-acquired airport property.

Several known non-standard features currently exist at RCA, as shown in Table 1-1 of the Purpose and Need. A BII category airport requires the runway/taxiway separation to be a minimum of 240 feet. Presently, the parallel taxiway is located 200 feet from centerline of taxiway to centerline of runway.

4.16.3 LIGHT EMISSIONS

No substantial impacts relating to light emissions are anticipated from airport development. Potential impact should be re-evaluated after the Airport Plan is complete. If impacts from light emissions occur, mitigation measures will be identified.

4.17 NOISE

Noise, is a major concern of airport operations and airport neighbors. Noise is measured in decibels (Db), which is a method of expressing the amplitude of sound. Generally, a 10 Db increase in sound levels is perceived by the listener as a doubling of the sound level. Aircraft sound levels are measured using a measure known as the "A-weighted decibel scale" (dbA) which was developed to measure sounds with more emphasis on the frequencies that can be heard by the human ear. This weight scale discriminates against lower frequency sounds in much the same manner as the human ear does.

All four development alternatives could result in increased noise levels as the airport could potentially support increased traffic volumes, regardless of any improvements being made.

Once the magnitude of noise has been determined, a method of illustrating the location of the various noise levels is used. Noise contours are the commonly accepted method representing noise levels.

The noise contours for the Ravalli County Airport EA were developed by melding two different but accepted methods. This process was used to satisfy the concerns of the general public as well as those of the Consultant.

First, actual noise measurements were taken in the field at six different locations using the NL-21 Noise Meters and using the LAMax settings. This method measures all noises at the respective locations where the portable units were placed. The field measurements were taken during April and May of 2004. To verify what created given entries, an aircraft log was referenced for the noisier aircraft. Ambient land noises at the various locations were also registered on the meters. Some of these noises could be attributed to motorcycles, lawn mowers, farm equipment, gravel trucks, and other mechanical devices.

The meters were placed on both ends of the runway on the extended centerline of the approach and departure paths. The first location was 150' from the end of the runway pavement. The second location for the meter was approximately 900' from the runway ends. The third locations were near Golf Course Road on the south and Stock Farm Road on the north end, both at approximately 2600' from the runway ends.

This scenario of monitoring the noise levels has provided verification of the present day ambient noise levels as well as any noise impact resulting from aircraft using the airport. The meters were on 24 hours a day and they registered the loudest noise of every

minute. This information was then downloaded to produce a minute-by-minute statistical printout for the 23-day period. While the timing (April/May) and length (23-day period) of the monitoring is not statistically significant, it does provide real world results to verify/calibrate the accuracy of the computerized model. The noise information provided in this section may conflict with that provided on the ALP. The ALP noise information was previously prepared and submitted by Carter-Burgess in conjunction with the Master Plan Update which was never approved.

The noise analysis was developed by using the FAA-accepted Integrated Noise Model (INM) from a computer generated map which was printed out using 55, 65, 75, and 85 DNL (day and night loudness) decibels. This information is overlaid on the Exhibit A – Property Map, included in this section. This INM method is the commonly used method for predicting aircraft noise exposures on an airport. These noise contours are an average annual depiction of the worst case scenario based on the future layout of the airport and using the aircraft types as noted in the forecast chapter of this EA. There could be times when the noted levels are exceeded, such as during an air show or when aircraft activity is heavy during a forest fire. However, during the winter months of low aviation activity, there will be many times when the plotted noise levels will far exceed the actual noise experienced. Nevertheless, this is the accepted method of plotting forecasted noise levels for a non-controlled general aviation airport.

The computerized contours (the DNLs) add a 10% penalty on any noise occurring between 10pm and 7am. The ambient noise levels are far less during these quiet times, thus noise of any kind is perceived as being louder, even though it may not be the case. When the DNL notation is made, it represents the adjusted average for loudness of day and night.

The primary purpose in developing the future noise contours is to provide the local governing bodies a tool or guide to follow in making certain residences are not placed into an area with objectionable noise levels. Lending agencies such as FHA, VA, or HUD will usually not approve a loan on a home within a 65 DNL or higher noise level.

The majority of the most critical noise contours, 65, 75, and 85, fall within the boundaries of the future airport boundary. It is suggested, however, that the land immediately contiguous to the easterly boundary of the airport be planned in a manner that will keep homes a reasonable distance from the airport property.

By using the portable noise meter readings, it was determined that 42% of the aircraft takeoff and land to the south, utilizing Runway 16, and that 58% takeoff and land to the north using Runway 34. This data was programmed into the INM model. Using Runway 34 allows the departing aircraft a slight downhill advantage as well as it being into the prevailing wind. Other factors programmed into the model were the average annual high temperature of 58.9°F and an eight-knot wind from the north.

In programming the INM model the following aircraft types and operational levels were used:

<u>Aircraft Types</u>	<u>Daily Ops</u>	<u>Annual Total Ops</u>
Piston:		
Cessna 172, 206, 206T, 210T	100	36,500
Beach 55		
Turbine:		
Cessna 441, Lear 35, GII,		
KingAir 300, Cessna Citation	5	<u>1,825</u>
		38,325

Single high- and low-entry points taken from the portable noise meters were compared to the completed INM noise contours. This was done to assure authenticity of the plotted contours. Every entry could not be verified as to the source in that just the highest level of noise is recorded and it was impractical to indicate the origination of even the highest of entries. For example, a neighborhood motorcycle or lawn mower, being part of the non-aviation ambient-related noise, could be louder than a given aircraft at a given location.

The noise contours have been color-coded with red indicating 85 DNL, yellow 75 DNL, green 65 DNL, and blue for 55 DNL. The plotting of the 55 DNL may serve little value as daytime levels of the ambient noise of the general area may, at times, exceed the 55 DNL.

As the runway is relocated 400 feet to the east and 600 feet north from its present south-end starting point, the contour is shifted accordingly. The noise contours for the new runway location show a runway length of 5,200 feet even though, initially, the runway may only have a length of 4,200 feet. This was done to show noise impacts at the future length. With all model factors remaining the same, the contours on the preferred development alternative are further to the north, and widen laterally.

The 85 DNL contour is primarily located within the obstacle-free zone surrounding the runway.

The 75 DNL contour extends beyond the runway laterally some 750 feet and off the runway ends some 1000 feet to the north and 500 feet on the south end.

The 65 DNL extends in the same elongated pattern and narrows down where it expires at approximately 2,000 feet from the south runway end, 1,500 feet on the north end, and laterally approximately 1,100 feet. The 65 DNL contour is the critical delineation line used in land use planning should it exceed beyond the airport properties.

The area of concern for compatible land use is the easterly boundary of the airport. The proposed land acquisition as shown on the "Exhibit "A" – Property Map" does not

encompass the 65 and 75 DNL contours on the east side of the runway. Should this property be acquired by the airport, it would mean an addition of 96 to 100 acres to the land purchase plan. The area of compatible land use planning should either be programmed for purchase or zoned in a manner to protect the airport from residential use. Uses such as parks, recreation, or light industrial are acceptable in the 65 and 75 DNL contours.

4.18 SECONDARY (INDUCED) IMPACTS

Induced or secondary impacts beyond normal growth or development patterns should not occur from the airport development. Projected population increases are not a direct result of development at the Airport. Public service demands and changes in business and economic activity will increase in time, but not beyond expected growth for the area. Development of the Ravalli County Airport should have a positive overall impact on the surrounding communities in that indirect economic growth should be anticipated with increased airport activity.

4.19 SOCIAL IMPACTS

In general, any Ravalli County Airport development recommendations to meet the Facility Requirements herein will not involve the need to relocate any residence, divide or disrupt established communities, disrupt orderly planned development, or create an appreciable change in employment. The relocation of the Daly Ditch Irrigation Company will be required prior to constructing the new runway.

4.20 SOLID WASTE

Construction, renovation, or demolition of most airside projects produces debris (i.e. dirt, concrete, asphalt, electrical components, etc.) that must be properly disposed of. New or renovating building projects also produce debris. While Alternatives 2, 3, and 4 all involve new construction, little in the way of debris will be created that will need to be disposed of offsite. The structures identified in the cultural resource survey are proposed to be relocated, thus resulting in little refuse being created. Alternative 2 does propose removal of the existing runway. The asphalt pavement could be rotomilled and recycled for use by the County, or used in base course for the new construction. The base course gravels in the existing runway could also be utilized in creating the base for the proposed runway. Lighting fixtures could be relocated or donated to Montana Aeronautics to be used at another Montana airport.

Shifting the runway alignment will impact the topography to the north. Site grading will be required to meet the necessary grades for the runway, as well as FAR Part 77 surfaces. It is proposed that all of the material will remain on airport property, either in selected waste areas, as part of the runway shoulder fill, or if the excavation produces adequate gravels as part of the base for the proposed runway. The proposed projects are not projected to produce any asphalt, concrete, or other refuse materials that will significantly impact existing waste facilities or processes.

There are no identified landfills within 10,000 feet of the existing or proposed runway at the RCA that could present wildlife attractant issues.

4.21 WATER QUALITY

4.21.1 BACKGROUND

The following quotes are from a February 14, 1975 edition of the Ravalli Daily Republic:
"Water, in any form, is a valued commodity in the Bitter Root. Aside from its obvious uses for agricultural and domestic activities, the County's water resources play a vital role in the aesthetic, recreational, and environmental values held by many residents..."

"The quality of water, the maintenance of stream setback vegetation, and the proximity and intensity of human activity all affect the quality of habitat for fish populations and productivity, migratory birds and many animal species."

When this article was written, the population of Ravalli County was 17,900, which is less than half of what it was in 2007.

4.21.2 WATER QUALITY

Water Quality impacts may result from sedimentation as a result of construction activities. However, implementation of erosion and sedimentation control practices will alleviate impacts associated with construction.

An Erosion Control Plan will be submitted to MDEQ's Permitting and Compliance Division in compliance with their Montana Pollutant Discharge Elimination System Regulations (ARM 16-20-1314) for any airport development project.

Airport development to meet the facility requirements will increase the area of impervious surfaces at the airport and will result in an increase of stormwater runoff. Stormwater runoff leaving the impervious surfaces of the airport will be conveyed through vegetated swales that will aid in the removal of particulates. Airport development and expansion could increase the potential for contamination of surface and groundwater during airport operations. Potential sources of contamination include: 1) oil, grease, fuel, and other fluids released from aircraft, maintenance vehicles, and storage/refueling areas; 2) lawn and field maintenance (herbicides and fertilizers); and 3) washdown water.

The airport will maintain a spill response plan and a spill response kit on site that will be available to all airport users. Small releases will be treated with absorbent material and larger spills will be treated with absorbent pads, socks, booms, etc., as necessary. Releases in excess of a reportable quantity will be reported to MDEQ and will be remediated to MDEQ specifications and standards. Spill control will effectively mitigate any releases of oil, grease, fuel, and other fluids from negatively impacting surface and groundwater during airport operations.

Herbicides and fertilizers may be used to maintain lawn and other grassed areas within the airport property. Application of fertilizers and herbicides will be consistent with the manufacturer's recommendations for use of the product. Where application of fertilizers and herbicides will be required in close proximity to surface water bodies, only chemicals designed for use in these areas will be specified. Appropriate application and selection of herbicides and fertilizers will prevent these materials from impacting surface and groundwater during airport operations.

Washdown water is not typically considered a source of contamination unless solvents are used in the washdown process or excess oils, fuels, or other liquids are conveyed in the water. Spill control on site will eliminate conveyance of contaminants on impervious surfaces to surface or groundwater. Cleaning operations requiring the use of solvents or that could result in the release of oils, fuels, or other liquids to surface or groundwater will be confined on site. Waste materials generated during these cleaning processes will be containerized and disposed of at an approved facility. Appropriate treatment of washdown water (preventing contamination and containing water that has become contaminated) will prevent washdown water from impacting surface and groundwater during airport operations.

New hangar development, as a result of airport expansion, could require the construction of new septic systems to service these new facilities. The presence of a high ground water table on much of the developed land restricts any new septic systems from being installed in accordance with state and local regulations. At this time, only those hangars that are grandfathered with independent septic systems or holding tanks are allowed. Most non-commercial hangar development does not require sewer facilities. Any commercial development however is impacted and such facilities are severely limited for new sewer facilities. Future site planning includes extending city sewer service to the airport, which would ultimately eliminate the need for individual septic systems. Currently, there is no scheduled date or timeframe for the City to provide these services. Any new sewer facilities will be installed to state and county standards, ensuring that these new facilities will not result in impacts to surface and groundwater during airport operations.

Other sources of groundwater and surface water contamination, such as airplane deicing, have not been identified as a component of anticipated airport expansion. Implementation of operational guidelines specified above will prevent airport expansion from negatively impacting ground and surface water resources through discharges of stormwater for all proposed development alternatives: 1) no action; 2) move existing runway 80 feet east; 3) relocate the runway centerline 240 feet east; 4) relocate the runway centerline 400 feet east.

4.22 WETLANDS

A wetland delineation of the Ravalli County Airport property was completed in September 2003 and October 2004. The investigation included an assessment of the site to identify jurisdictional wetlands and other waters of the U.S. that could potentially be affected during project development. Several wetland areas were identified

throughout the property, with a significant portion of those wetlands located east of the existing runway as well as north of the runway near the vicinity of Gird Creek. The Airport property currently encompasses approximately 318 acres. Eighteen distinct wetland areas were identified during the delineation process (see the Ravalli County Airport Wetland Delineation Map in Appendix VIII, *RCA Wetland Delineation Report*). The total acreage of these wetlands is approximately 45.97 acres. Additional data regarding delineated wetlands is provided in Table 4-5.

Jurisdictional determinations are provided by the U.S. Army Corps of Engineers (COE) for implementation of Section 404 of the Clean Water Act. Jurisdictional wetlands/waterways are identified as areas that maintain a surface hydrological connection with known waters of the U.S. Waters of the U.S. include the area below the ordinary high water mark of stream channels and lakes or ponds connected to the tributary system, and wetlands adjacent to these waters. Non-jurisdictional wetlands are isolated due to a lack of an apparent hydrologic connection to known waters of the U.S. Final jurisdictional status for all delineated wetlands/waterways within a project area must be provided by COE.

Following completion of the wetland delineation, a wetland delineation report was prepared and submitted to the COE. Upon completion of a site inspection, COE provided its concurrence with the wetland delineation and a jurisdictional determination by letter dated April 27, 2005. The jurisdictional status of the delineated wetlands is also provided in Table 4-5. The wetland delineation report and corresponding COE Jurisdictional determination are included in Appendix VIII, *RCA Wetland Delineation Report*.

TABLE 4-5: Wetland Information

WETLAND	WETLAND TYPE	JURISDICTIONAL STATUS	ACRES
W-1-03/ W-1-04	Riverine	Yes	5.36
W-2-03	Riverine	Yes	6.26
W-3-03	Riverine	Yes	1.38
W-4-03/ W-4-04	Riverine	Yes	18.90
W-5-03	Depressional	Yes	0.05
W-6-03/ W-6-04	Depressional	Yes	0.69
W-7-03/ W-7-04	Depressional	Yes	0.37
W-8-03/ W-8-04	Riverine	Yes	0.36
W-9-03	Depressional	Yes	0.10
W-10-03/ W-10-04	Depressional	Yes	9.37
W-11-03	Riverine	Yes	0.12
W-12-03	Riverine	Yes	1.31
W-13-03	Depressional	No	0.33
W-14-03	Riverine	No	0.13
W-15-04	Riverine	Yes	0.83
W-16-04	Depressional	No	0.10
W-17-04	Depressional	Yes	0.07
W-18-04	Depressional	Yes	0.24
Total Wetland Acreage			45.97

4.22.1 OBJECTIVE

The objective of the investigation was to provide the Ravalli County Airport with a wetland delineation describing the presence and extent of wetlands and other waters of the U.S. This information has been used to evaluate the different alternatives for the proposed development and improvement for the Airport. The four alternatives assessed for impacts to wetland and other jurisdictional waters of the U.S. are 1) no action; 2) move existing runway 80 feet east; 3) relocate the runway centerline 240 feet east; 4) relocate the runway centerline 400 feet east. The four alternatives include the construction of apron and taxiways to meet the purpose and need.

4.22.2 METHODS

The wetlands delineation completed was based on the methodology developed by the COE, and other Federal agencies, for implementation of Section 404 of the Clean Water Act. The investigation consisted of reviewing existing site-specific information and on-

site inspection and sampling using the Routine Determination Method outlined in the 1987 COE Wetland Delineation Manual. Wetlands were identified by assigning each delineated area a unique number. Wetland numbers for wetland boundaries established in 2003 are followed by -03 and those delineated in 2004 are followed by -04.

Off-site Review

A preliminary off-site review was completed to identify potential wetland areas and non-wetland waterways within the project corridor. The source documents used for this review included:

- National list of plant species that occur in wetlands: 1988 national summary. U.S. Fish and Wildlife Service, Washington, DC. 244 pp.
- Hydric soils of Montana NRCS (1995)
- Soil Survey of the Bitterroot Valley Area, Montana. Soil Conservation Service, USDA Series 1951, No. 4 (1959).
- Aerial photographs NRIS (1995), Morrison-Maierle (1999)
- Munsell Color Chart (2000)

On-Site Review

A routine wetland determination was utilized for the wetland delineation at the Ravalli County Airport. Field work began by traversing the property to identify plant communities, waterways, and property characteristics. Data points were established in locations to identify the interface between upland and wetland areas.

Hydrophytic Vegetation

Plants must be physiologically or morphologically adapted for life under saturated or anaerobic soil conditions to grow in wetlands. The COE and the U.S. Fish and Wildlife Service have determined the estimated probability of each plant species' occurrence in wetlands, and have assigned an "indicator" status to each species to reflect their findings. Accordingly, plants may be categorized as obligate (OBL), facultative wetland (FACW), facultative (FAC), facultative upland (FACU), or upland (UPL). Species with an indicator status of OBL, FACW, or FAC are considered adapted for life in saturated or anaerobic soil conditions. A sample plot is considered to have wetland vegetation if more than 50% of the numbers of dominant species present, within each stratum, have an indicator status of FAC, FACW, or OBL.

Hydric Soils

Hydric soils are defined as "soils that are saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper part of the soil profile." Soil is saturated when the capillary fringe occurs within the major portion of the root zone (within 12 inches of the surface). Hydric soils exhibit certain characteristics that can be observed in the field. These characteristics or indicators include: high

organic content, accumulation of sulfides. Greenish or blueish gray color (gley formation), mottling, and dark soil color (low soil chroma). Organic content is estimated visually and texturally, sulfidic material is determined by odor of sulfide gases, and soil colors are determined by using a Munsell soil color chart.

Areas that readily exhibited wetland or upland conditions were sampled at intensities sufficient to determine the break point between wetland and uplands. In areas where hydrophytic vegetation was present, data points were also established to determine the presence of hydric soils and wetland hydrology.

Wetland Hydrology

The technical criteria for wetland hydrology guidelines have been established as permanent or periodic inundation, or soil saturation for a significant period (estimated to be 6 to 16 days in Hamilton, Montana) during the growing season. Wetland hydrology may be supplied by surface water, groundwater, and/or direct precipitation.

Areas were examined for visual indicators of wetland hydrology, including areas of ponding or soil saturation, evidence of previous water inundation or saturation, water marks, and drainage patterns.

Artificial Wetland Hydrology

The NRCS designates natural wetlands as those wetlands occurring as a result of natural conditions and artificial wetlands as those resulting from human activity. This human activity can be from irrigation structures, ditches, and artificial waterways, which provide localized hydrology sufficient to have allowed wetland characteristics to develop.

Wetland Determination

Vegetation, soil, and hydrology data for each sampling point are examined to determine the presence or absence of wetlands. If all three parameters exhibit wetland characteristics, a positive wetland determination is made for that area represented by the sampling plot (that wetland may or may not, however, be jurisdictional). If any one of the parameters does not exhibit positive wetland indicators, the area is determined to be a non-wetland as defined in the 1987 COE Manual.

4.22.3 RESULTS

Eighteen wetlands and waterway areas were identified during the field investigation (Table 1), and are located throughout the subject property (see the Ravalli County Airport Wetlands Figure following this section). Significant wetland acreage was found to the east of the existing runway and in the area north of the runway associated with Gird Creek. Dominant wetland vegetation that was observed during the field investigation includes: dagger-leaf rush (*Juncus ensifolius*), slender rush (*Juncus tenuis*), baltic rush (*Juncus balticus*), Nebraska sedge (*Carex nebrascensis*), beaked

sedge (*Carex rostrata*), reed canarygrass (*Phalaris arundinacea*), American speedwell (*Veronica Americana*), American mannagrass (*Glyceria grandis*), tufted hairgrass (*Deschampsia cespitosa*), prickly currant (*Ribes lacustris*), black cottonwood (*Populus balsamifera*), willow species, smooth scouring rush (*Equisetum laevigatum*), broad-leaved cattail (*Typha latifolia*), and fowl bluegrass (*Poa palustris*).

4.22.3.1 Development Alternatives

Four different options for the development and improvement for the Ravalli County Airport have been proposed. The four alternatives are 1) no action; 2) move existing runway 80 feet east; 3) relocate the runway centerline 240 feet east; 4) relocate the runway centerline 400 feet east. The following is an evaluation of potential impacts to wetlands and other waters of the U.S. for each development alternative.

Alternative 1: No Action

This alternative would keep the runway at its present 4,200-foot length and at the existing location. This alternative does not adversely effect the wetlands or other waters of the U.S. on the Airport property.

Alternative 2: Move Existing Runway 80 Feet East

This alternative would require moving the existing runway 80 feet easterly. The potential impact of this alternative occurs in wetlands W-4-03 and W-17-04. Depending on the final runway elevations and grading requirements of the runway extension the non-jurisdictional wetland W-14-03 may be impacted up to 0.13 acres. The total potential impacts to jurisdictional wetlands and waters of the U.S. for Alternative 2 is 0.60 acres.

Alternative 3: Relocate Runway Centerline 240 Feet East

This alternative would include construction of a new runway 240 feet east of the present runway, as well as the extension of the existing runway to the north to serve as the parallel taxiway. The potential impact of this alternative occurs predominantly in wetland W-3-03. Minor portions of wetlands W-4-03, W-6-03 and -04, W-7-03 and -04, and W-8-03 and -04 would also be impacted. Depending on the final runway elevations and grading requirements of the runway extension the non-jurisdictional wetland W-14-03 may be impacted up to 0.13 acres. The total potential impacts to jurisdictional wetlands and waters of the U.S. for Alternative 3 is 1.48 acres.

Alternative 4: Relocate Runway Centerline 400 Feet East

This alternative would convert the present runway into the parallel taxiway and construct a new 75-foot runway 400 feet east and parallel to the existing runway, as well as the extension of the existing runway to the north to serve as the parallel taxiway. This option would eliminate wetlands W-5-03 and W-9-03 (0.15 acres) and would impact portions of W-3-03, W-4-03, W-6-03 and -04, W-7-03 and -04, W-8-03 and -04 and W-

10-03 and 04 (1.53 acres). Depending on the final runway elevations and grading requirements of the runway extension the non-jurisdictional wetland W-14-03 may be impacted up to 0.13 acres. Total potential impact to jurisdictional wetlands and waters of the U.S. for Alternative 4 is 1.96 acres.

4.22.4 MITIGATION MEASURES

The four alternatives evaluated for the proposed development and improvement for the Airport are 1) no action, 2) move existing runway 80 feet east, 3) relocation of the runway centerline 240 feet east, and 4) relocation of the runway centerline 400 feet east. Implementation of alternative 1- no action and alternative 2 – move existing runway 80 feet east would result in impacts of 0.60 acres of waters of the U.S. Implementation of Alternative 3 would result in impacts to 1.48 acres of waters of the U.S., and implementation of Alternative 4 would result in impacts to 1.96 acres of waters of the U.S. Completion of Alternatives 2, 3 and 4 would require securing an individual Clean Water Act Section 404 permit prior to project development. Securing an individual permit would require construction or acquisition of compensatory mitigation (at a ratio established by COE). An evaluation of mitigation alternatives for the project site has concluded that compensatory mitigation is available for Alternatives 2, 3 and 4 within the same watershed as the Airport. The project shall secure compensatory mitigation through one or more means, including the Teller Wildlife Refuge, on County-owned property, or on privately-owned property. Securing compensator mitigation will result in no adverse effect to wetland resources in the area of the Airport for Alternatives 2, 3 and 4.

4.23 WILD AND SCENIC RIVERS

This impact category has been considered and is not applicable since no rivers classified as wild or scenic are currently listed or proposed for listing near the Airport.

4.23.1 STREAM PROTECTION

Montana's Stream Protection Act (SPA) is a state law which requires that any agency or subdivision of federal, state, county, or city government proposing a project that may affect the bed or banks of any stream in Montana must first obtain a 124 Permit from MFWP. The development proposed for the Ravalli County Airport will affect a stream bed, Gird Creek, and will require a 124 permit prior to the start of construction.

What is the purpose of the SPA To protect and preserve fish and wildlife resources, and to maintain streams and rivers in their natural or existing state.

Who administers this law? MFWP administers the 124 permitting process.

How long does the permitting process take? Any agency or unit of government planning a project must submit a Notice of Construction (application) to MFWP, which has up to 60 days to review the application, perform an on-site investigation, and approve, modify, or deny the application.

Affected environments in the water quality analysis include: wetlands, floodplain, coastal zone management, coastal barrier resources, wild and scenic rivers, and stream protection. No impacts to floodplain, coastal zone management, coastal barrier resources, and wild and scenic rivers will result from Alternatives 1 - 4 as these topics are not applicable to the project area. No wetland/stream impacts are anticipated with development Alternative 1. Alternatives 2, 3 and 4 will result in both wetland impacts and stream impacts (Gird Creek).

4.24 CUMULATIVE IMPACTS

A cumulative impact analysis provides officials with information on impacts resulting from other actions that have occurred or what will occur within a defined time and geographic area. The responsible authorities use this information to decide if a proposed airport project's impact to a specific resource would cause a significant impact on that resource when added to past, present, and reasonably foreseeable actions within a specific geographic area or designated time frame.

Cumulative effects may occur when the impacts of an airport action are considered with the actions of other agencies, tribes, private developers, or the FAA. The key question is: do the effects of the Airport's (FAA) proposed action on a particular environmental resource, when added to the effects on the same resource due to Airport (FAA) and non-Airport actions, adversely impact that resource? Therefore, the cumulative analysis should focus on meaningful impacts, not inconsequential or irrelevant ones. Doing this allows the analysis to focus only on those environmental resources the proposed action would affect and the impacts it would cause.

In order to help evaluate possible cumulative impacts, research was conducted to identify other known or planned projects in the vicinity of the airport. Notable past, ongoing, or other reasonably foreseeable projects in the Hamilton area are discussed below.

4.24.1 Federal and State Projects

Federal and State landholdings in the immediate Hamilton area are limited. The Bitterroot National Forest is located approximately 7 miles to the east and 5½ miles to the west of Hamilton. Based on review of current NEPA project lists, the following U.S. Forest Service (USFS) projects ongoing and/or planned on National Forest lands in Ravalli County within the general vicinity of Hamilton:

- Aerial Application of Fire Retardant – EA – Implementation 10/2007
- National Forest System Land Management Planning - Proposed Rule – EIS – Implementation 03/2008
- Selway-Bitterroot Wilderness Invasive Plants EIS – Implementation 09/2008
- Bitterroot National Forest Travel Management Planning – EIS – Implementation 01/2010
- Trapper Bunkhouse BEMRP Project – Implementation 05/2008
- Haacke Claremont Fuel Reduction – EA – Implementation 09/2008

- Waugh/Andrews EA - Grazing Allotment – Implementation 06/2008
- Lower West Fork Project – EIS – Implementation 05/2009
- numerous categorical exclusions for outfitter licenses, tree thinning projects, trails, County quarry project, etc. – Implementation 6/2008 to 10/2009

The Bureau of Land Management (BLM) does not own any federal property in the Hamilton area. A review of current BLM projects in western Montana and current NEPA project lists shows there are no projects occurring or planned for Ravalli County. The nearest BLM land is 38 miles to the northeast in the vicinity of Clinton, Montana.

Trust lands owned by the State of Montana exist in the general vicinity of the airport. These lands are presently leased to adjoining landowners for livestock grazing or farming purposes. The Montana Department of Natural Resources and Conservation (DNRC) issued its Final Real Estate Management Programmatic EIS for State Trust Lands in November 2004. This document was prepared to guide future agency decisions for real estate management on Trust lands. The Programmatic EIS does not require any specific changes in management direction or existing leases on State lands in the area. There is one section of State land located approximately 4 miles east of the airport, and one section approximately 4 ½ miles to the west.

In August, 2007 the Montana Department of Transportation (MDT) received the Record of Decision on the Final EIS for the U.S. Highway 93 – Hamilton to Lolo project from the U.S. Department of Transportation and Federal Highway Administration. Construction has been ongoing for several years and includes bridge, road widening, sight distance, animal control, fencing, slope grading, and resurfacing improvements among others. Wetland impacts associated with the highway project are being mitigated through wetland restoration projects implemented at the Lee Metcalf Refuge and the Tucker Crossing Ranch.

Future MDT projects in the area include a roadway safety project to be completed for the Skalkaho Road south of Hamilton, and resurfacing projects between Hamilton and Darby in 2008. A bridge project is to be completed for the Skalkaho Road south of Hamilton in 2009. A safety project is also proposed at Corvallis, north of Hamilton, in 2012. See the Federal & State Tentative Construction Projects 2008-2012 map at the end of this section for additional details.

4.24.2 Ravalli County Projects

Ravalli County has developed a Growth Policy to guide future land use decisions. The Growth Policy, Amended August, 2004, identifies policies and objectives to guide new developments within the County. In addition, the planning department is working towards comprehensive county-wide zoning. The zoning will address residential densities, land-use, lot line setbacks, and building height. There has been some discussion about the interaction of the zoning with airport operations, but as it is a “work in progress” there has been no definitive outcome as of yet.

Subdivision review indicates two subdivision applications were filed within 2 miles, to the south of the airport, since 2004. Silverado Heights, a 10.4 acre, 10 lot subdivision, was filed in March, 2007 and is approximately 1600 feet west of the airport. Hidden View Estates (2), a 13.41 acre, 2 lot subdivision, was filed in December, 2006 and is located approximately 4800 feet to the southwest of the airport. A large, approximate 411 acre, 626 lot residential/commercial subdivision (Flatiron Ranch) is currently in preliminary plat stage and is expected to be annexed into the City of Hamilton. Flatiron Ranch is located to the southeast of the airport at a distance of 1600 feet at the nearest, to 12,800 feet at the most distant across the project.

4.24.3 City of Hamilton Projects

Contacts with the City of Hamilton and Ravalli County indicate that housing development has occurred to the south and west of the airport and the area may be attractive for additional development. It is reasonably foreseeable to expect some additional residential and commercial development around the City of Hamilton in the future. There were no other projects noted in the area of the airport aside from those listed under the Ravalli County Projects section.

4.24.4 Conclusion

Based on the review and findings of known ongoing, planned, and proposed projects in the Hamilton area, it is concluded that the projects noted above would not cause any cumulative impacts in association with the proposed action. This conclusion was reached due that these projects either 1) do not affect lands in the immediate vicinity of the airport, and/or 2) the construction/implementation of the projects are occurring on a different timeline that the proposed airport improvements, and/or 3) do not impact the same environmental issues as those encountered with the airport. Future federal and state projects will be subject to review under NEPA and MEPA to determine if significant environmental impacts are likely and identify mitigation measures for any identified adverse effects.

Ravalli County, through the implementation of the Growth Policy and Airport Influence Area, ultimately has the ability to control many potential cumulative effects associated with any new growth and development. This occurs through the land use planning process and/or associated regulations.

FEDERAL & STATE TENTATIVE CONSTRUCTION PROJECTS 2008 - 2012

Estimated Letting Dates as per October 30, 2007, TCP

